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EXAMINING RELATIONSHIPS BETWEEN EARLY CHILDCARE TEACHERS'  
ADULT ATTACHMENT ORIENTATIONS AND QUALITY OF INTERACTION IN  
THE INFANT CLASSROOM

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy

in

The School of Social Work

by  
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For T.W.

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## **Abstract**

Over the past several decades, women have entered the workforce in increasing numbers. This has led to the majority of infants and young children being cared for outside of the home by extra-familial caregivers. Research has shown the benefits that quality childcare can have on the developmental trajectories of children, as well as the detrimental effects that can be seen when children experience low quality care. Further, children are particularly vulnerable in the first year of life when they are establishing attachment bonds with their primary caregivers. With the long hours that many spend in the care of childcare workers, these teachers are likely serving as attachment figures for these infants. Identifying factors that contribute to quality care in childcare centers is essential to ensure the future well being of children. This study examined the relationship between infant teachers' emotional characteristics, particularly their levels of anxiety and avoidance as they pertain to their adult attachment orientations and the quality of their interactions with the infants in their classrooms in observations using the CLASS-Infant. The study also examined the relationship between the teachers' capacities for mentalization, as well as their personal beliefs about infant care, and the observed quality of interactions between them and the infants in their classrooms. 35 classrooms were included from two urban areas of Mississippi and Louisiana that contained 62 teachers. No clear pattern of association was found between the teachers' emotional characteristics measured and scores on the CLASS observations. Challenges pertaining to observational studies in early childhood classrooms and implications for training and policy are discussed.

## **Chapter 1: Introduction**

The quality of an infant's relationship with his primary caregiver has substantial impacts on his future development (Bowlby, 1969). Mothers and other immediate familial caregivers serve as infants' primary attachment figures (Bowlby, 1969). However, with the extended amount of time that infants are now spending with professional childcare providers, extra-familial caregivers are likely serving as secondary attachment figures for infants (Bowlby, 1969). The ability of childcare workers to provide quality caregiving environments is essential in order to foster security of attachment and maximize an infant's development within childcare settings.

### **Benefits of Attachment Security and Quality Caregiving**

Attachment security is achieved when a caregiver accurately, effectively, and consistently meets the needs of her child in a way that allows the child to trust that her caregiver will protect her and provide for her (Bowlby, 1969; Costa & Figueiredo, 2013). Based on the infant's experience with her caregiver, the infant develops an *internal working model* that influences how the infant learns to interact with her environment and what she expects to experience in future relationships (Fonagy, Steele, Steele, Moran, & Higgitt, 1991; Howes & Matheson, 1992; Main, Kaplan, & Cassidy, 1985). Through a secure child-caregiver relationship, the infant feels safe to explore her environment and learn, while using her caregiver as a secure base (Bowlby, 1969).

As infants develop, the interactions they have and the attachment relationships they develop with their caregiver(s) serve as a foundation for subsequent cognitive and social-emotional development (National Institute of Child Health and Human Development [NICHD], 2006). A hallmark of social-emotional development is the ability to regulate one's emotions in order to engage in pro-social behaviors (Spinrad et al., 2006). The acquisition of emotional self-regulation is facilitated in infancy through interactions and exchanges between the infant and his

primary caregiver (Letourneau, Watson, Duffett-Leger, Hegadoren, & Tryphonopoulos, 2012). Recent neurochemical research has provided insights into the physiology of these emotional capacities. For instance, cortisol is a hormone associated with stress and fear secreted by the kidneys. High-quality mother-child interactions that reflect the mother's attuned responses to her infant's emotions and her ability to effectively soothe her infant's distress have been found to regulate and manage the infant's cortisol levels (Letourneau et al., 2012). If the baby is able to be soothed and have his distress reduced, cortisol levels are regulated, mitigating the negative effects of sustained cortisol levels and stress.

Attachment security has also been found to be associated with brain functions responsible for cognitive performance, and in turn, later outcomes in school settings. Bowlby (1973) proposed that attachment security paves the way for healthy self-reliance, comprised of healthy self-esteem, motivation, and self-regulation, which are characteristics that influence school performance and achievement. Interaction qualities with mothers at five months old have been found to predict higher frontal resting EEG power, a laboratory measure of observed brain function involving emotional expression and personality, at 10 and 24 months of age (Bernier, Calkins, & Bell, 2016). Researchers found that attachment security was linked to the development of effortful control in toddlers, which mediated the relationship between attachment security and academic achievement among the same sample ten years later when they were high school students (Dindo et al., 2017). Our understanding of linkages across early interactive qualities and brain development is still in the early stages. Based on the research to date, it appears that brain development and consequent cognitive performance, including academic achievement, are likely shaped by the care and nurture provided in early attachment relationships.

## **Consequences of Attachment Insecurity and Low Quality Caregiving**

When an infant is able to trust that his caregiver will protect him, attune to his needs, and effectively assist him in times of distress, attachment security can be achieved (Bowlby, 1969). Attachment insecurity is more likely in cases where a parent consistently fails to meet her infant's needs or inconsistently provides adequate and sensitive caregiving (Bowlby, 1973, 1980), and attachment insecurity has far-reaching negative implications (Bowlby, 1969, 1973, 1980). Attachment insecurity affects the formation and maintenance of interpersonal relationships throughout the lifespan and in a multitude of settings (Bowlby, 1973; Londerville & Main, 1981; Thompson & Lamb, 1983).

The attachment orientation we develop in infancy and early childhood remains relatively constant throughout the lifespan in the absence of significant intervention, though adaptations to it are possible in response to changing circumstances (Bowlby 1973, 1980; Main, Hesse, & Kaplan, 2005; Main, Kaplan, & Cassidy, 1985). Therefore, should an insecure attachment orientation develop early on, the traits of attachment insecurity and its subsequent influences on social-emotional development are expected to persist, where external intervening factors do not alter this trajectory (Bowlby, 1973, 1980). Attachment orientation influences how individuals experience, interact and react within interpersonal relationships throughout the lifespan (Bowlby, 1969; Main, Kaplan, & Cassidy, 1985). Exposure to consistent insensitive caregiving increases the risk for attachment insecurity, depression and anxiety (Bowlby, 1973, 1980). In cases where children have been consistently exposed to frightening caregivers or maltreatment, more serious attachment insecurity in the form of attachment disorganization may develop, and more serious mental health problems and psychopathology are more likely to develop and persist as the child

grows older and enters adulthood (Bowlby, 1980, Egeland & Sroufe, 1981; Sroufe, Egeland, Carlson, & Collins, 2005).

In the case where an *insecure-ambivalent* attachment orientation has developed in a parent-child dyad, these children are often found to possess higher rates of anxiety stemming from the unpredictability of being able to access sensitive caregiving, and this anxiety could continue into adulthood (Bowlby, 1973). Individuals with insecure-ambivalent attachment orientations have been shown to have higher rates of separation anxiety in childhood, but also in later close relationships (Bowlby, 1973). Individuals classified with insecure-ambivalent attachment styles have been observed as having heightened levels of anger and aggression (Bowlby, 1973; Buyse, Verschueren, & Doumen, 2011). A chronic inability to trust their caregiver to consistently attune to their needs and respond appropriately leads individuals with insecure-ambivalent attachment styles to frequently exhibit overdependence on others and a hypersensitivity to rejection, both of which inhibit the ability to establish and maintain healthy relationships (Bowlby, 1973). This anxiety can continue into adulthood, affecting relationships and the person's ability to thrive in occupational settings throughout the lifespan (Bowlby, 1973).

Individuals with an *insecure-avoidant* classification, those whose caregivers were inconsistently emotionally available as a sensitive provider and protector, have been found to have higher rates of depression both in childhood and in adulthood (Bowlby, 1980). In a more recent study, Lee and Hankin (2009) found similar results; children with insecure-avoidant attachment orientations were more likely to experience heightened levels of anxiety and depression in the adolescent years. Commonly, individuals with insecure-avoidant attachments experience emotional distance from their caregivers, and often learn early on to adapt by

minimizing their needs for emotional intimacy and replace these needs with self-reliance. This strategy can contribute to a sense of hopelessness and a tendency to detach from interpersonal relationships. Individuals with insecure-avoidant attachment orientations often have low self-esteem, excessive amounts of guilt, and rely on emotionally restricting defense mechanisms such as repression and intellectualization (Bowlby, 1980).

In cases where children have been exposed to extremely frightening experiences with their caregivers in the form of severe abuse or neglect, a *disorganized* attachment orientation is likely to become established (Kidwell et al, 2010; Hardy, 2007). These children are more likely to exhibit externalizing behavior problems, such as defiance, violence, and aggression (Moss et al., 2004). Many children classified with a disorganized attachment style have experienced maltreatment (Egeland & Sroufe, 1981).

Researchers studying the relationship between attachment insecurity and other areas of development have found that children with insecure attachment orientations are more likely to demonstrate externalizing behaviors at home within familial relationships and in the school environment (Buyse, Verschueren, & Doumen, 2011; Fearon, Bakermans-Kranenburg, van IJzendoorn, Lapsley, & Roisman, 2010). This tendency towards externalizing behaviors often leads children to encounter disciplinary problems at school, which are often associated with academic underachievement (Erickson, Sroufe, & Egeland, 1985). Further, children with attachment insecurity, particularly insecure-disorganized attachment, have been found to be more likely to possess more serious behavioral disorders, observable callous-unemotional traits in interactions with others, or to be diagnosed with oppositional defiant disorder (Pasalich, Dadds, Hawes, & Brennan, 2012). Moving into later adolescence and adulthood, children with insecure-disorganized attachment orientation are more likely to develop anti-social personality

disorder, leading to higher rates of delinquency and incarceration (Shaw & Gross, 2008). Since attachment security aids in the development of emotional self-regulation, then attachment insecurity is likely to be associated with an inability to regulate one's own emotions and subsequent reactions to stressors, making the ability to engage in pro-social behaviors more challenging (Spinrad et al., 2006).

Children who have developed insecure attachment orientations with their primary caregivers are at higher risk for problems in other developmental domains. Attachment insecurity is associated with lack of self-reliance, which, in its absence is often replaced with overdependence on others for help or a lack of motivation to attempt challenging or difficult tasks (Bowlby, 1973). Children with insecure attachment orientations have also been found to have a more difficult time succeeding at mastering challenging tasks (Erickson & Farber, 1983; Main, 1973; Matas, Arend, & Sroufe, 1978).

It is important to note that an individual's attachment orientation with his parent does not develop in a vacuum, but rather, is likely the outcome of an intergenerational pattern of attachment insecurity that has persisted through prior generations (Bretherton, 1990; Van IJzendoorn, Juffer, & Duyvesteyn, 1995). The experiences a child has with her primary caregivers shape her attachment orientation and the way she reacts, behaves, and mentalizes within interpersonal relationships outside of the parent-child relationship (Fonagy, Steele, Steele, Moran, & Higgitt, 1991), including with the child's own future offspring (Bowlby, 1973, 1980). A parent with an insecure attachment orientation is more predisposed to misinterpreting an infant's signals and inaccurately and insensitively responding, leading to the insecure attachment style repeating itself. To this point, Ablow, Marks, Shirley Feldman, and Huffman (2013) found that mothers who possessed insecure-avoidant attachment orientations were more likely to



interpret their infants' cries as personally aversive rather than interpreting the cry as a signal of need. The same mothers were more likely to report higher levels of anger and rejection as a reaction to hearing their babies cry. If a parent should act upon these thought-reactions, their baby would be left without access to attuned, sensitive, or responsive caregiving, likely leading to the repetition of an insecure attachment orientation.

### **The Migration of Mothers into the Workforce**

Infants in the United States now spend a substantial amount of time within extra-familial childcare settings. The extensive amount of time that many infants spend with childcare providers is largely the result of women entering the workforce over the last several decades. Between 1976 and 1998, the percentage of mothers working outside of the home increased from 31% to 59%, doubling in percentage in a mere 20 year span (Lombardi & Poppe, 2001). Since that time, the rate of mothers entering the work force has continued to rise; in 2015, it was estimated that 70% of mothers in the United States now work outside of the home (U.S. Department of Labor, 2015). Looking more specifically at the infant and early childhood population, the U. S. Department of Labor (2015) identified that 64% of mothers with children under the age of six and 57% of mothers with infants participated in the labor force in 2013. Ensuring that infants' experiences with their childcare providers are contributing to healthy development has become critical, given the substantial increase in influence that childcare providers are now having during the earliest and most sensitive period of human development.

The time spent in the daycare setting in the infant and toddler years represents a significant, prolonged, and daily separation from the primary attachment figure; therefore, it is important that the teacher be able to sensitively meet the needs of the infant or young child during the caregiving hours to maintain consistency in caregiving and convey a continued sense

of safety and nurturance (Bowlby, 1969). The most comprehensive study to date that has examined the effects of non-maternal childcare on the developmental outcomes of children in the United States found new indicators of developmental risk (NICHD, 2006). One major finding from the Study of Early Childcare and Youth Development [SECCYD] was that developmental risk to children in day care varied with the quality of the care they received. Children who experienced high quality early childcare had more positive outcomes on measures of school readiness and cooperation than children who had experienced only maternal care or poor quality childcare (NICHD, 2006). This has been widely received as good news for mothers, who out of necessity or desire, rely on childcare provision in their day-to-day lives.

From a social justice perspective, however, parents, especially those of low socioeconomic status, must often choose an affordable option over quality childcare (National Association of Child Care Resource and Referral Agencies, 2006). In the SECCYD, researchers aimed to explore what effects high quality care might have on children in at-risk, low-income samples; however, they were unable to do so because so few children of low socio-economic status were found to be in childcare settings where high quality care was identified. In another study conducted during the same time frame, 40% of infant classrooms in a multi-state sample of centers were classified as low quality (Cost, Quality, & Outcomes Study Team, 1995). In the same study, only 8% were classified as high quality. Low-income families, having to potentially settle for what is most affordable without the ability to select care based on quality, appear to be overly subjected to low-quality care, which could pose more detrimental outcomes to children who might be in most need of the benefits that high quality care could provide.

The study made it clear that in nearly every domain examined, the influence of familial relationships and the home environment significantly outweighed the influence of extra-familial

care on indices of children's development (NICHD, 2006). The positive or negative developmental outcomes observed in most of the children included in the study were most closely associated with the quality of the child's relationship with his primary caregiver in the home environment (NICHD, 2006). At the same time, there were a few areas of development found to be associated with high quality childcare. Children with developmental delays at 18 months were found to benefit cognitively from exposure to high quality childcare compared with delayed 18 month-olds who were not (NICHD, 2006). Also, children exposed to high quality childcare were more likely to exhibit healthy social skills and cooperative behavior in Kindergarten than those who were not (NICHD, 2006).

Conversely, extended amounts of time in childcare settings in the first year of life were associated with higher rates of attachment insecurity between the infant and his mother (NICHD, 2006; Belsky, 2011). Infants younger than 12 months who spent more than ten hours per week in childcare outside of the home were at greater risk for developing insecure attachment with their mothers, irrespective of the quality of the caregiving (Belsky, 2011). Other researchers identified similar findings during the previous decade. Belsky and Rovine (1988) found that children who were spending greater than twenty hours per week in non-maternal childcare were at greater risk of developing avoidant attachment styles with their primary caregiver. However, they suspected the quality of the caregiving environment played a role in whether that effect was seen. Researchers suggest that significant separation between parent and child during infancy may prevent the development of attachment security and may be a traumatic event in a child's life (Hall & Geher, 2003). Bowlby (1969, 1980) observed that extensive separations between a child and his attachment figure could result in attachment insecurity or a disruption in the development and maintenance of attachment security. Bowlby (1969) stated that the development of the

attachment bond is affected by maternal deprivation. Low quality care in the childcare setting has been found to exacerbate these findings (Belsky, 2011), making the provision of high quality care important to the mitigation of these risks.

### **Role of Childcare Providers in Healthy Child Development**

Bowlby (1969, 1973) wrote that a child's teacher, as they are commonly referred to in the daycare setting, could serve as a secondary attachment figure for the child, and he postulated that a child's teacher was the most likely candidate to serve as a secondary attachment figure, due to the large amount of time spent in their teacher's care. More recent researchers have also identified the role of teachers as secondary attachment figures (Buyse, Verschueren, & Doumen, 2011; King & Newnham, 2008). Buyse, Verschueren, & Doumen (2011) found that teachers and extra-familial childcare providers not only serve as a secondary attachment figures, but could have the potential to serve a more substantial purpose in cases where attachment insecurity exists in the parent-child dyad. The relationship a child forms with his caregiver, or teacher, has been shown to buffer the effects of an insecure attachment relationship with a parent when the teacher demonstrates sensitivity and high quality care (Buyse, Verschueren, & Doumen, 2011). Secure attachment relationships between children and their teachers have also been associated with lower levels of negative externalizing behavior (Zionts, 2005). However, despite the potential benefits that infant childcare providers offer, the quality of the care provided is often lacking.

Despite the many skill-sets required in order to provide quality care and the amount of important knowledge regarding infant development that exists (Wertfein, Spies-Kofler, & Becker-Stoll, 2009), working as an early childhood caregiver is often viewed as unskilled labor. In another study, childcare work was found to be ranked as one of the least appealing or satisfying occupations (Shellenbarger, 2011). Additionally, the education that childcare workers

receive about child development is usually limited, leaving them largely uneducated in this key area. In contrast, the parenting intervention literature has demonstrated the importance of child development knowledge for effective parenting (Degortardi & Davis, 2008). The important role that early childhood teachers play in the lives of developing children is largely undervalued.

The importance of a sensitive and responsive caregiver in the first years of life to the development of attachment security has been well documented. Similarly, the characteristics of parental relationships that support the development of attachment security and healthy child development have been studied at length, including the ways that a parent's adult attachment orientation can shape the quality of the attachment relationship established with her children. A majority of infants in the United States are now spending a substantial amount of time with non-maternal caregivers during the period of time in which their attachment relationships with their caregiver(s) is forming. Understanding what impacts and influences childcare providers' abilities to provide sensitive and responsive caregiving to the infants in their classrooms in a way that promotes healthy social-emotional development is important in order to continue to enhance methods to support childcare workers in their role and promote the best possible extra-familial caregiving environments for children.

This study aimed to examine whether or not a childcare teacher's adult attachment orientation is related to her observed qualities of her interactions with children in the classroom environment. Two additional variables were considered, including the teachers' capacities for mentalization and their beliefs and intentions regarding infant care.

## **Chapter 2: Review of Literature**

### **Theoretical Framework**

#### **Attachment Theory**

We know quality caregiving to be essential to the healthy development of a child within parent-child relationships. Attachment development is the process by which an infant develops a unique bond with his primary caregiver by the tenth to twelfth month of life for most children (Bowlby, 1969). Attachment development is a universal process that occurs within parent-child relationships through the interactions that take place between the parent and child that has far-reaching impacts on future development (Bowlby, 1969). Attachment theory outlines how infants' early relationships with their primary caregiver can ultimately affect children's future personality development and interpersonal relationships (Hardy, 2007).

Attachment development has been linked to the quality of caregiving received by the infant (Bowlby, 1969). According to Schore (1994), the interactions between an infant and his caregiver provide a foundation for neurological development and form neural networks that influence the infant's future relationships and personality. Attachment relationships develop in the first year of life between infants and their caregivers through interactions, and the attachment style that is established has the potential to remain relatively constant throughout the life span (Hall & Geher, 2003).

Attachment theory was first theorized by John Bowlby in the 1960's (Fairchild, 2006). Bowlby (1969) proposed that infants are inclined to seek and form attachments to their primary caregivers, due to the evolutionary inheritance of the attachment behavioral system, in which infants are both biologically and psychologically motivated to gain the assurance of survival and protection from their caregivers (Bowlby, 1969; Fairchild, 2006). Infants begin forming close,

dependent bonds with their primary caregiver from the first moments of life (Hardy, 2007), and caregivers' responses to the infants' needs within this bonded relationship over time reinforce the infants' ability or inability to feel secure and protected (Bowlby, 1969).

Attachment security is formed to the extent that the child views the caregiver as a "safe haven" to provide protection and support (Dykas & Cassidy, 2011). Insensitive, intrusive and/or rejecting behaviors of a parent play a key role in the development of insecure attachment patterns (Riggs, 2010). When a parent accurately interprets an infant's cry of hunger, for example, and responds by feeding her infant, the infant's felt assurance of survival and protection is reinforced, and is better able to trust that his needs will be met in the future. He feels secure. To the contrary, if the infant's cry of hunger is misinterpreted or ignored and the infant goes unfed, his doubt and uncertainty is reinforced instead, and his ability to trust that his needs will be met in the future is diminished. He feels insecure. Not exclusive to hunger, an infant's attachment system is activated by various experiences of vulnerability, including, but not limited to hunger, fright, discomfort, fatigue, and illness. The activation of the attachment behavioral system in such conditions involves an instinctive desire to gain proximity to a specific caregiver (Bowlby, 1969). Attachment security is thus founded upon a history of responses a child has received from an attachment figure in times of need.

### **Parallels to Eriksonian Theory**

Developmental theorists relate the process of attachment to a caregiver in infancy to Erik Erikson's theory of psychosocial development, specifically, the first stage, where one develops basic trust (King & Newnham, 2008). The trust Erikson referred to is characterized by the infant's growing assurance in the availability of her caregiver to consistently respond to her needs. King and Newnham (2008) explain that the development of basic trust also involves

accurate identification of affect, where a person learns to identify feelings, both their own emotions and the feelings of others. A parent's ability to do so translates into her being able to accurately and sensitively identify the emotion of her infant's experiences (Ainsworth, 1964). According to King and Newnham (2008), when a child does not successfully acquire basic trust with a primary caregiver, they are more likely to experience deficits in the ability to effectively identify their own emotional states as well as those of others. The inability to accurately identify affective states can lead to social maladjustment because the child is unable to accurately identify the feelings of others and respond in a pro-social manner that facilitates continued growth and maintenance of healthy relationships (King & Newnham, 2008). In severe cases, this maladjustment can potentially manifest itself in the form of anti-social behaviors, as the child grows older (King & Newnham, 2008). King and Newnham (2008) have shown that teaching children how to name different feelings and correctly identify and associate them, i.e. sad, happy, angry, etc., can rebuild their ability to identify affective states and can, in turn, rebuild their ability to form basic trusting relationships.

### **Attachment Classifications**

The human attachment process begins in an infant's first year of life through bonding with his primary caregiver and results in the infant-parent dyad establishing an attachment style, or orientation, that characterizes patterns within their interactions. Literature shows that infant attachment patterns are maintained into adulthood and can influence all future attachments (Hardy, 2007). Mary Ainsworth, an American developmental psychologist, was a student and colleague of Bowlby, and the first to empirically test his theory of attachment development. She invented the Strange Situation Procedure, which is regarded as the best-known observational measures of attachment. By twelve months of age, administrators trained in the Strange Situation



Procedure can categorize infant-parent dyads into one of four styles of attachment orientation (Ainsworth, Blehar, Waters, & Wall, 1978, Main & Solomon, 1986, Main & Solomon, 1990). During the Strange Situation Procedure, the child and his primary caregiver go through a series of seven 3-minute episodes, each involving a different arrangement: the dyad being together, separated, reunified, and/or joined by a stranger. The episodes take place in a specific and consistent order, and they are designed to subject the infant to a controlled amount of stress related to being introduced to an unfamiliar person and then being separated from her caregiver. In each of the episodes, the child is observed for his reaction to the separations, the presence of the stranger, and of particular consideration, the child's reaction to his caregiver reentering the room after separations (Ainsworth et al., 1978). In circumstances where a child might become very distressed, the procedure is immediately terminated. The child's approach to reunification after separations strongly indicates the characteristics of the dyads' attachment style.

The four styles of attachment orientation consist of a secure attachment orientation, two patterns of insecure attachment orientation, and a disorganized attachment orientation, with each type of attachment style identifiable based on certain sets of behavioral markers and interactive patterns (Ainsworth, Blehar, Waters, & Wall, 1978, Main & Solomon, 1986, Main & Solomon, 1990). Children with secure attachment orientations are able to perceive their caregivers as a reliable source of protection (Fairchild, 2006). During the Strange Situation Procedure (Ainsworth et al., 1978), children with attachment security tend to protest and exhibit distress when their caregivers leave the room and they are separated from them. When the caregiver returns to the room after the separation, the child with attachment security typically attempts to gain proximity to the caregiver by walking or crawling towards to the caregiver and will likely extend his arms, signaling a desire to be picked up and held close (Ainsworth et al., 1978; Hardy,

2007). Securely attached infants have been found to be more directly and openly expressive of emotions to their caregivers, both verbally and non-verbally (Kidwell et al., 2010). It's clear they are distressed, and their desire for reunification and taking comfort in the presence of their caregiver is clear and evident. Once reunited, the caregiver is able to quickly soothe the child and the child's distress quickly dissipates, and the child typically resumes playing and exploring the room, again using the caregiver as a "secure base," or location of safety (Ainsworth et al., 1978). Because the caregiver is the child's source of protection, the child feels unprotected and unsafe when the caregiver leaves, but having the secure bond allows the child to trust his caregiver which allows for more expedient soothing and resumed exploration.

In the Strange Situation Procedure, children with insecure-avoidant attachment classification tend to show avoidant behaviors; they don't show significant externalized signs of distress upon the parent leaving the room, and they also demonstrate similar avoidant, withdrawn behavior when the caregiver returns (Ainsworth et al., 1978; Fairchild, 2006; Hardy, 2007). They tend to avoid comfort-seeking behaviors and engage in minimal proximity-seeking behaviors, unlike their secure counterparts (Kidwell et al., 2010). They may also exhibit negative affect towards the parent (Kidwell et al., 2010). The child learns to inhibit inclinations towards attachment behaviors, such as proximity-seeking with the caregiver or using the caregiver as a "safe haven" to which to return in distressing circumstances.

In the case of insecure-ambivalent attachment orientations, children become significantly distressed upon separation from their caregiver (Fairchild, 2006), as other children do. Their distress, however, tends toward dysregulation. Subsequently, despite their desperation for the caregiver to return, when she does, they remain inconsolable and unable to efficiently return to a calm state of play and exploration (Fairchild, 2006). The caregiver is typically inconsistent in her

responses to the child's needs and distress; sometimes sensitive and reliable, and other times not (Fairchild, 2006). The inconsistent and intermittent availability and responsiveness of the parent, as well as rejections of comfort-seeking, lead the child to develop insecurity regarding their ability to gain the desired comfort and feeling of safety (Hardy, 2007). This reaction could also result from times when a parent exhibits difficulty serving as a secure base that allows the child to go out away from her and explore. She may feel an anxiety around her child being away from her, and the child, in turn, perceives that his safety is excessively at risk when separated from his mother, leading to extreme distress and anger towards the mother when she leaves and difficulty with re-regulation when she returns (Ainsworth et al., 1978).

Children with disorganized attachment styles tend to exhibit disoriented and confused behavior during the Strange Situations Procedure (Kidwell et al., 2010). Due to the likelihood of having experienced maltreatment and frightening experiences with their caregivers, they often exhibit unpredictable reactions to separations and reunions (Kidwell et al., 2010). These children exhibit conflicting behaviors such as both withdrawing and reaching for their caregiver simultaneously, both seeking and rejecting the caregiver (Hardy, 2007). Children with disorganized attachment orientations have often been maltreated and often react with behaviors that indicate fearfulness (Fairchild, 2006; Hardy, 2007). Their attachment figures are typically perceived as either frightening or as frightened themselves (Lyons-Ruth & Jacobvitz, 1999). Very frequently, the attachment figures of insecure-disorganized children have unresolved emotional trauma in their histories, and become easily overwhelmed with their children's age-appropriate demand for care (Lyons-Ruth & Jacobvitz, 1999). In contrast to children with insecure-avoidant and insecure-ambivalent attachments, disorganized children have no consistent, coherent strategy

to engage their caregivers and express their needs for safety and comfort. As such, they are at relatively higher risk for compromised psycho-social developmental outcomes.

Infants are instinctively predisposed to form an attachment bond with their primary caregiver regardless of the quality of interactions that occur, including instances in which caregivers have responded to their infants in inconsistent, insensitive, neglectful, or abusive manners (Fairchild, 2006). In circumstances such as these, children are likely to form insecure attachments to their caregivers (Egeland & Sroufe, 1981; Riggs, 2010). Parent and family factors associated with maltreatment have also been linked to insecure attachment in children, including parental depression and poverty (Kidwell et al., 2010). Mothers in low-income families were found have higher levels of parental stress and this stress was associated with higher rates of attachment insecurity (Casady, 2001). Letourneau and colleagues (2012) found that cortisol levels (the hormone associated with stress reactions) was significantly higher in mothers with postpartum depression and their quality of interaction with their infants was significantly lower. Further, the mothers' stress levels significantly impacted the stress and cortisol levels of her infant. Based on these findings, it is possible that teachers with depressive or anxiety disorders might also exhibit less sensitivity in interaction with the infants in their care, and their stress-levels might also influence the stress experienced by their students.

At preschool age, secure attachment can be identified by open emotional expressions, joint participation in problem-solving activities, and more reciprocal control during mother-child interactions (Moss, Bureau, Cyr, Mongeau, & St-Laurent, 2004). Different patterns of social behavior can characterize the various styles of attachment insecurity as the child grows and develops. By age three, children classified as having disorganized attachment are more likely to exhibit externalizing, internalizing, and aggressive behavior problems than other children (Moss

et al., 2004). Children with avoidant or ambivalent patterns of attachment tend to show less externalizing behavior problems than those with disorganized attachment orientations, but still more externalizing behavior problems, such as aggression and defiance, than children with attachment security (Moss et al., 2004). Children with avoidant patterns of attachment exhibit the highest levels of internalizing behavior problems, such as anxiety, depression, or low self-esteem (Moss et. al., 2004).

### **Importance of Caregiver Sensitivity and Responsiveness**

Caregiver sensitivity plays a central role in the promotion of a child's emotional security. When a caregiver is sensitive to an infant or young child's needs, she is demonstrating the ability to empathize with the child's thoughts, feelings, and experiences, and accurately and reliably infer the meaning of the child's signals (Bowlby, 1969). When the caregiver, whether a parent or a teacher, executes these skills repeatedly, she is proving to the infant or child that she is a trustworthy partner and a reliable resource in the endeavor of survival. The infant experiences trust and is provided safety and security. To the extent that these critical needs are provided for, other developmental processes can be facilitated. The parent acts as a "safe haven" and a "secure base" for the child (Ainsworth, 1964, p. 54). The child can feel free to explore, which allows for cognitive, physical, and social development, while trusting in the knowledge that his mother will protect him from harm and be available to assist him when needed. Should the child not be afforded this essential ability to trust in the presence and existence of a safe haven through the process of attachment development, opportunities in other important areas of development may be compromised.

A mother's quality of response to her infant's cues impacts future social-emotional development. Caregiver responsiveness is characterized by the ways in which a caregiver reacts

and responds to an infant's verbal and non-verbal communications, through a transactional, bi-directional interplay between the parent and child (Sameroff & Chandler, 1975). Spiker et al. (2002) found that quality of interaction and response is characterized by emotional support and contingency with the type and meaning of the infant's cues. Leigh et al. (2011) added that quality of interactions involves quick and effective response to an infant's cues. If an infant was startled by a loud noise and began crying, a mother exhibiting quality responsiveness would be able to identify the cue as a signal of fear and provide comfort and reassurance to soothe the distress and restore the infant's sense of safety. Similarly, if the infant were signaling distress related to hunger, a mother displaying quality responsiveness would identify the distress trigger accurately and provide adequate, appropriate, and timely nourishment.

Fantini-Hauwel and colleagues (2012) found that adults with insecure-avoidant attachment styles were more likely to exhibit symptoms of alexithymia, a clinical term referencing a chronic lack of emotional awareness. Interestingly, adults with insecure-ambivalent attachment styles were found to be hyper-aware of others' emotional states, but not necessarily in a healthy way. Hyper-awareness of the emotional states of others was associated with a sense of anxiety at the fear of perceived rejection or loss of a relationship. In this study, adult attachment was measured using the Attachment Style Questionnaire, also known as the Experiences in Close Relationships Questionnaire (Fraley, 2012), which consists of two subscales: avoidance and anxiety. These two dimensions of attachment insecurity in adults have been shown to be robust predictors of a variety of personal and social adjustment difficulties (Fraley, 2012).

In a sample of nulliparous women in China, Ma, Ran, Chen, Ma, and Hu (2017) found that subjects with insecure-avoidant adult-attachment styles showed less brain reactivity to infant

facial expressions and infant crying, than secure or insecure-anxious women. Subjects, all who were without children of their own, were shown images and visuals of infants who they did not know personally while undergoing EEG brain monitoring. As was found in the Fantini-Hauwell et al. (2012) study, women with insecure-anxious attachment styles demonstrated greater reactivity to infants' faces than avoidant women, especially when exposed to visuals of infant crying. Secure women showed higher reaction amplitudes, the term used to describe brain activity on EEG monitoring, to all infant faces. In some cases, however, anxious women showed even higher reactivity than secure women. Similar to the previously mentioned study, this finding is likely related to anxious women being more likely to fear rejection or withdrawal in a relationship.

Attachment-based intervention research has examined caregiver sensitivity and responsiveness as factors with the propensity to improve attachment relationships. In one of the first of these studies, Van den Boom (1994) recruited infant-mother dyads to an intervention for 3 months, from the time the infants were 6 months old until they were 9 months old. The infant's attachment security was measured pre-intervention and again at 12 months of age. The study demonstrated that improving maternal sensitivity and responsiveness, through teaching the mother strategies for effectively interpreting her infant's cues and effectively meeting her infant's needs, improved attachment security at 12 months (Van den Boom, 1994), in addition to other beneficial factors, such as improved maternal behaviors related to attunement to her infant's needs. Higher rates of cognitively sophisticated exploratory behavior on the part of the infants were achieved, as well as reduced rates of infant distress. In a meta-analysis conducted by Bakermans-Kranenburg, van IJzendoorn, & Juffer (2003), 70 published studies, including 88 intervention effects were analyzed to identify which characteristics of interventions targeting

parent-child relationships developed and tested over the previous years produced the largest effects. The researchers discovered that interventions focusing on maternal sensitivity, specifically, were the most effective interventions (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003).

### **The Caregiver as a Secure Base**

Bowlby (1969, 1973) referred to a child's primary caregiver as a "haven of safety" (p. 303) and a secure base. As a secure base, the caregiver makes herself available to the child in times of distress or need for comfort, while also facilitating healthy exploration of the child's environment during periods of calm and regulation. In secure attachment relationships, this oscillation between comfort-seeking and exploring plays out in everyday routines with the child circling in to the parent and back out (Bowlby, 1969). The caregiver permits the child to go out from her and explore his environment while providing protective supervision and monitoring for cues of need. While the child is exploring, he will use his mother as an anchor, periodically glancing in her direction to ensure her presence and to socially connect or physically approaching her to engage her in the play or exploration shortly before venturing back out. When a need or distress arises, and the child's attachment system is activated, he will cease his exploration and seek proximity to his mother for protection, safety, and assistance in regaining emotional regulation (Bowlby, 1969).

Dysfunctions in the safe haven/secure base pattern are typically present in insecure parent-child dyads. With avoidant attachment styles, the caregiver tends to overemphasize and overly encourage exploration, even when the child is signaling a need for comfort and safety. However, the avoidant caregiver also demonstrates difficulty adequately providing a safe haven



or meeting the child's need for felt security (Ainsworth et al., 1978). Caregivers of ambivalent attachment styles tend to provide a safe haven inconsistently; sometimes the child is able to access supportive comfort and felt security and other times, they cannot. In addition, ambivalent caregivers tend to discourage the child's autonomous exploration of his environment (Ainsworth et al., 1978).

Some interventions targeting caregiver capacities function as a secure base have shown some linkages to improvements in the security of attachment between the child and her caregiver. The Circle of Security is one such intervention designed to target a caregiver's capacity to function effectively as a secure base for her child (Hoffman, Marvin, Cooper, & Powell, 2006; Powell, Cooper, Hoffman, & Marvin, 2014). Hoffman, Marvin, Cooper, and Powell (2006) studied the effects of this intervention on 65 mother-child dyads. Children were in the toddler to preschool age-range. Through this intervention, the mothers' improved in their abilities to serve as a secure base resulted in the majority of the mother-child dyads in the intervention group moving from more insecure to secure attachment orientation. More recent studies have demonstrated similar results and additionally found that the Circle of Security intervention improved caregiver reflective function and caregiver mental representations of their child (Huber, McMahon, & Sweller, 2015).

There is as yet, however, much to be learned about how parenting skills are learned and the extent to which they can be applied to effect change in children's attachment security. Van IJzendoorn, Juffer, and Duysvesteyn (1995) write that although an adult with an insecure attachment representation may be able to learn and execute a set of learned behaviors more consistent with attachment security, it is likely that the expression of these behaviors will be restricted and limited to rote applications of these skills, lacking in flexibility and spontaneity.

She may be unable to easily adjust and adapt to the inevitable variations and unexpected circumstances that surface day to day as someone with a secure attachment representation would be able to.

### **Role of Reflective Function in Caregiver Sensitivity**

Reflective function is a cognitive mechanism through which infant-caregiver communication occurs and leads to the formation of an attachment relationship (Fonagy, Steele, Steele, Moran, & Higgitt, 1991). Reflective function is the process by which nonverbal cues given by an infant are interpreted and acted upon by his parent (Fonagy et al., 1991). The reflective self is defined as the ways an individual is able to observe his own thoughts, feelings, mental processes, and mental experiences, as well as the mental experiences of others (Fonagy et al., 1991). Reflective functioning is considered to be an essential step in emotional development during the early childhood years and both contributes to and is impacted by attachment security.

Reflective function is also referred to as *mentalizing*, or mentalization, which is a term used to describe an individual's thoughts about behavior, thinking, emotions, beliefs, and desires; in other words, a form of meta-cognition (Fonagy et al., 1991; Fonagy, Gergely, & Target, 2008; Fonagy & Target, 2005). Mentalizing occurs in regards to oneself and others, thinking about others' behavior, thought-processes, emotions, beliefs, and desires (Fonagy, Gergely, & Target, 2008; Fonagy & Target, 2005). Further, individuals are able to mentalize, or think about, what others are mentalizing about them in return. In other words, a person may think about what she believes, feels, and thinks, and she can also think about what her friend thinks or assumes about her beliefs, feelings, and thoughts, thereby influencing what she mentalizes about herself, based on what she infers that her friend thinks of her. A primary caregiver's ability to engage in

mentalizations with her infant or child is essential to the caregiver being able to respond sensitively to the infant's signals and needs, and thereby is a critical component of attachment development (Fonagy et al., 1991). The caregiver must be able to reflect upon her infant's apparent emotions and mental state in order to determine how to effectively respond to her infant's needs.

Infants have yet to develop the reflective self; they are still operating from the pre-reflective self, which only experiences life in the immediate present, without the capacity to reflect on co-occurring mentalizations (Fonagy et al., 1991). When a mother or caregiver is able to accurately interpret the cues of her infant and effectively take action to meet her infant's needs, the caregiver's actions ultimately come to serve as an attuned representation of the infant's mental processes (Fonagy et al., 1991). In this way, the caregiver begins the process of developing the infant's reflective self. Based on the infant's experience with his caregiver, the infant develops an *internal working model* that influences how the infant learns to interact with his environment and what he expects to experience in future relationships (Main, Kaplan, & Cassidy, 1985; Howes & Matheson, 1992). Internal working models are developed in infants through repeated interactions with their primary caregiver that influence the ways the infant begins to predict the outcomes of future interactions with their caregiver (Bowlby, 1969, 1973). Further, reflective function has been found to serve as a protective factor linked to resilience (Fonagy et al., 1991). Mothers found to have high deprivation and neglect scores related to their own histories, but who also had securely attached children were found to have high reflective capacities, in contrast to those who developed insecure relationships with their children (Fonagy et al., 1991). Reflective function is thus believed to mediate the relationship between parental attachment orientations and development of secure attachment with their own children.

In an unpublished doctoral dissertation, Jurie (2011), examined the reflective capacity of 25 infant teachers using a semi-structured interview technique and analyzed relationships between teacher reflective function and the caregiving environment, using several questionnaires and teachers' scores on the *Infant/Toddler Environmental Rating Scale* (ITERS; Harms, Cryer, & Clifford, 2003), an observational measure of classroom quality that is often used by regulatory boards to grade the quality of center care in a given state or region. This researcher did not find a correlation between teacher reflective function and teacher scores on the ITERS. However, there were a few limitations and potential issues in the study design that the author enumerates in her discussion. First, the ITERS scores used in the analysis were not of first-hand observation, but were from retroactive data that had been collected by the regulatory boards in the region. With high turnover rates and the way that the ITERS measures the classroom environment as a whole rather than the specific teacher present, it was difficult to know if the ITERS score for a given classroom was representative of the current teacher's ability or that of the teacher who was present beforehand. Also, the author questioned whether or not the ITERS was the best observational tool when simultaneously measuring reflective function. The ITERS places an emphasis on structural components of the classroom environment, such as hygiene routines, toys and materials available, and cleanliness as much as it considers process features, leaving the quality of the interactions considered more limitedly. On the other hand, reflective function develops as the result of interactions and is what guides the quality of interaction. Structural components of the classroom environment may have little to do with the teacher's capacity to understand the mental states of the infants in her care, and likely have much more to do with regulatory and licensing protocols that the teacher has little control over. Jurie (2011) speculated

that using a measure of caregiving quality that placed emphasis on the process elements of quality interactions might yield different results.

## **Conceptualization**

### **The Importance of High Quality Caregiving in the Classroom**

Within early childhood classrooms, there are structural features and process features that contribute to the overall experience of a child in a given classroom and with a given teacher (NICHD, 2006). Structural features include aspects such as adult-child ratios, group size, or how many children are in each classroom, and staff training and education. These elements are often determined by state and local laws and enforced by regulatory licensing boards. Process features outline the interactional components that occur between the teacher and the children in her care (NICHD, 2006). These include elements such as positive caregiving, elimination of negative interactions, and encouraging development. Higher levels of positive caregiving, as a part of the process features within the classroom has been found to be associated with more positive developmental outcomes for children (NICHD, 2006).

Teachers and non-maternal caregivers can, and often do, serve as secondary attachment figures for the children in their classroom (Bowlby, 1969). The strength of children's emotional bonds with their teachers is likely to vary with the amount of time they spend with their teachers and the degree to which the teacher serves as the source of protection and safety within the hours spent in the school or daycare setting. The time spent in the daycare setting in the infant and toddler years represents a significant, prolonged, and daily separation from the primary attachment figure; therefore, it is important that the teacher be able to sensitively meet the needs of the infant or young child during the caregiving hours to maintain consistency in caregiving and convey a consistent sense of safety (Bowlby, 1969).

In studies examining the role of teacher-child closeness in buffering the effects of mother-child attachment insecurity, the association between parent-child attachment-insecurity and aggressive behavior was eliminated among student populations in classrooms where a high level of teacher-child closeness was observed (Buyse, Verschueren, & Doumen, 2009). Similarly, within the same study (Buyse, Verschueren, & Doumen, 2009), attachment insecurity between mother and child was predictive of low-teacher-child closeness; however, when the level of teacher sensitivity was also high, that association was eliminated, and children with mother-child attachment insecurity were just as likely to form close relationships with their teachers as were children with mother-child attachment security. Bowlby (1969) theorized that secondary attachment figures play a role in child attachment development, and he further identified teachers as an extra-familial individual with whom a child is most likely to form an attachment relationship. Interestingly, the previously mentioned study (Buyse, Verschueren, & Doumen, 2009) identified sensitivity, specifically, as the primary predictive factor influencing the quality of the teacher-child relationships, which is consistent with the findings in meta-analyses of parent-child interventions by Bakermans-Kranenburg, van IJzendoorn, & Juffer (2003), where again, caregiver sensitivity and its improvement served as the factor most likely to predict an intervention's effectiveness. Caregiver sensitivity clearly plays a significant role in the development of healthy attachment relationships and serves as a marker for quality of interaction.

Recent research has begun to study concordances in the ways in which children perceive caregiving qualities in parents and teachers, inferring this from the spontaneous narratives they create in response to given "story-stems". Vu and Howes (2012) reported significant correspondences in 4 attachment-related relationship qualities between children's narrative

representations of parents and teachers in a sample of 97 Mexican-American children. Additionally, children's narrative representations of secure child-mother relationships were significantly associated with teachers' reports of perceived closeness in their relationships with the children. In a study of 39 children in the U.S. (mean age 90 months) that included 3 narrative story-stems representing children's classrooms, Page, Eugene, and Morgan (2019) found that children's narrative representations of parent and teacher figures as caregivers were significantly correlated. They also found that children's narrative enactments of attachment behavior directed toward teacher figures were significantly associated with their actual parents' reported positive perceptions of their teachers.

Research has shown that the classroom environment has a strong impact on the social, emotional, cognitive, intellectual, academic, and motivational outcomes of students, and this environment is created by the teacher and supported by the school (King & Newnham, 2008). Social competence and behavior problems in preschool children often coincide and both are related to attachment quality (King & Newnham, 2008). Attachment security aids in the development of social competence and attachment insecurity has been associated with the development of behavior problems (Anan & Barnett, 1999; Bost, Vaughn, Washington, Cielinski, & Badbard, 1998). Further, the relationship a child forms with his teacher has been shown to buffer the effects of an insecure attachment relationship with a parent when the teacher demonstrates sensitivity and high quality care (Buyse, Verschueren, & Doumen, 2011).

Teachers can create classroom environments that foster growth and development, which in turn support children's future social and vocational success (King & Newnham, 2008). Attachment security in individuals is thus linked to important social goals. Most children establish educational paths of relative success or failure by the end of third grade, or by the age

of 8, that then continue for the remainder of their school careers (Bailey, 2002). In addition to cognitive abilities, school readiness and academic achievement depend on the skills and abilities associated with social competence and social-emotional development. Without these capacities, academic achievement is much less likely (Stacks & Oshio, 2009).

The development of a child's emotional understanding is influenced by the interaction between child and caregiver (Kidwell et al., 2010). Laible and Thompson (1998) found that children with secure attachment show more emotional understanding, meaning they were better able to accurately identify their own emotions, as well as the perceived emotions of others. In contrast, they found that children with insecure attachment have difficulty expressing their emotions to caregivers (Laible & Thompson, 1998). Researchers have also found links between preschoolers' level of emotional understanding and their caregivers' expression of emotions (Laible & Thompson, 1998).

Research in classrooms with preschool and school-aged children has outlined several effective strategies for promoting healthy social-emotional development. Teachers can foster social and emotional development in their classrooms by controlling the "affective climate of the classroom" and the verbal and non-verbal messages they send to their students (Davis, 2003, p. 213). Several factors are included in what determines the affective climate of the classroom: students' feelings of belonging to their school and their class, students' perceptions of their teachers as caring and supportive, and "the extent to which the teacher fosters a climate of social responsibility and pro-social behavior" (Davis, 2003, p. 213). In accordance with developmentally appropriate practices, teacher-child closeness is fostered using "communication techniques such as approaching the child, engaging in shared open communication, talking through issues, speaking to the child face to face and employing positive expressions" (Quan-



McGimpsey, Kuczynski, & Brophy, 2011, p. 238). Classroom exercises and lessons can foster an understanding of feelings and how to appropriately identify affect (King & Newnham, 2008).

The negative effects of insecure attachment with a caregiver can be buffered by a secure attachment to a teacher (Buyse, Verschueren, & Doumen, 2011; King & Newnham, 2008).

Teachers serve in this capacity in several ways, particularly by supporting the social and emotional development of the children in her classrooms (King & Newnham, 2008). By modeling healthy social skills and relationships, being attuned and sensitive to the needs of her students, and teaching the students how to identify the feelings of both themselves and others, the teacher may enhance her students' ability to engage in healthy relationships and lower the students' susceptibility to the risks associated with parent-child attachment insecurity (King & Newnham, 2008). A secure attachment with a teacher can also give the child the tools to develop secure attachment with future, subsequent teachers (Buyse, Verschueren, & Doumen, 2011). Consistent, secure attachment relationships over time with teachers throughout the school experience can further buffer and mitigate the effects of an insecure attachment with a primary caregiver (Buyse, Verschueren, & Doumen, 2011).

Bowlby (1969) points out that while teachers may be serving as attachment figures for a child in their care, the teacher is not experiencing the attachment relationship in the same way that the biological mother is. The teacher, of course, doesn't experience the same hormonal, physiological, and psychological elements as the mother, which shape caregiving responsiveness (Bowlby, 1969). What may come more instinctively to the mother in her caregiving behavior may emanate, for a teacher and other caregivers (including adoptive and foster parents), from inclinations toward empathic responsiveness. It also may be that caregiving by others besides the mother can be particularly influenced by instruction. There is some evidence that short-term,

behaviorally focused interventions that teach caregiving skills might be most helpful. In a study directly examining the use of an attachment-based intervention with childcare teachers, Biringen et al. (2012) employed educational information sharing, teacher training, and “emotional availability coaches” to teach new skills and provide supplemental support consultation to teachers. Teachers in the intervention group showed improvement in the quality of their relationships with the children in their classrooms and the children exhibited improved security of attachment with their teachers.

### **Systemic Effects within Early Childcare**

In addition to various personal capacities within the teacher, systematic factors related to the field of early childcare have been shown to impact the quality of care. Lombardi and colleagues (2001) make suggestions for improving childcare to better promote quality care. They suggest providing increased compensation, improved work environments, and more supportive professional relationships and training opportunities to reduce staff turnover. Infants and toddlers may be able to form secure attachment relationships with their teacher, but if the teachers are frequently shifting and changing, the child repeatedly has to cope with losing a secure attachment figure and starting over with, what to the child, is a stranger. This inconsistency in caregiving could lead to increased anxiety and a reduced sense of emotional security (Bowlby, 1973). Additionally, a child’s sense of attachment security may be significantly influenced by the extent to which the teacher remains constant through the infant and toddler years until they reach preschool (Honig, 2002). What may seem simply to be a child switching to another classroom, to the child may mean separation from a substitute mother figure.

In a study of infant-toddler childcare teachers, teachers' job satisfaction was found to be positively correlated with the quality of their interactions with students, as well as their interactions with colleagues (Hossain, Noll, & Barboza, 2012). Job satisfaction was also related to lowered rates of burnout and quitting. The same study found that teachers' income level was also related, negatively, to higher rates of burnout and quitting. Childcare teachers without specialized professional training are often paid minimum wage for their work, and the average childcare worker in the United States in 2015, made just \$14,000 annually (Data USA, 2015). Frequent quitting and high turnover rates inhibit the ability of teachers to provide stable, continuous care for children (Hossain et al., 2012). In a European sample, job satisfaction among childcare workers was related to type of childcare center in which they were working, whether the center was public, private, or family/parent operated (Kusma, Groneberg, Nienhaus, & Mache, 2012). The quality of the psychosocial working conditions in each setting was found to be a primary factor related to job satisfaction. Studies of children's relationships with their childcare teachers should include examination of teachers' job satisfaction, as this is likely to influence their psychological adjustments and the emotional resources they may have for children.

Teachers' beliefs about caregiving and teachers' level of education have been linked to quality of caregiving and teacher (NICHD, 2006). Teacher's beliefs about their role in the classroom and the importance of children's social-emotional development have been found to predict the use of social-emotional learning strategies in the classroom (Zinsser, Sewark, Denham, & Curby, 2014). Further, teacher's beliefs and intentions about their work have been linked to their practices in the classroom (McCarty, Abbott-Shim, & Lambert, 2001, McMullen, 1999). In Mississippi, the state where the current study will take place, infant/toddler teachers are

required to hold a high school diploma, but there are no requirements for further higher education in child development, education, or a related field (Mississippi Department of Health, MSDH, 2017). The State of Mississippi, however, does require 15 clock-hours of professional development training each calendar year for early childhood teachers.

### **Caregiver Adult Attachment**

As outlined previously, the attachment style that is established in infancy between a child and her primary caregiver tends to persist throughout the lifespan, impacting the quality of future interpersonal relationships, including the child's future relationship with her own children (Bowlby, 1973, 1980; Bretherton, 1990; Van IJzendoorn, Juffer, & Duyvesteyn, 1995). The child's attachment security or insecurity, shaped through interactions with her primary caregiver, influences her capacity for mentalization and reflective function, which if impaired, could lead to increased insensitivity in interactions with others (Fonagy et al., 1991). An inadequate ability to sensitively attune to her own child's needs will likely lead to attachment insecurity between her and her infant. The process by which adult attachment and mentalization lead to attachment security between mothers, or primary caregivers, and their children is illustrated in Figure 1.

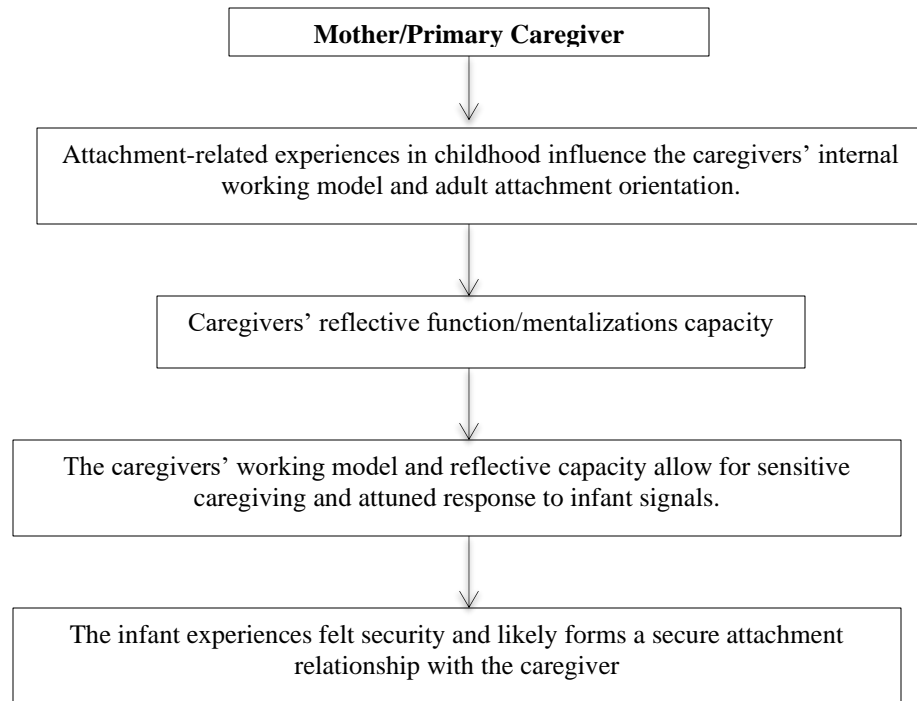


Figure 1: Process of mother-child attachment development.

This pattern has shown evidence of extending into the classroom environment between teachers and children. When teachers are emotionally involved with the infants in their care and can provide physical and emotional support for them, they have the propensity to serve as attachment figures for the children (Ewing & Taylor, 2009; Howes, 1999; King & Paro, 2015). When a teacher is able to serve in this emotionally supportive role, the children in her classroom feel safe making their own emotions and concerns known to their teacher; therefore rendering them more likely to be able to elicit the support they need. This experience of felt security paves the way for a secure attachment relationship to form between the child and her teacher (Buyse, Verschueren, & Doumen 2011).

Vallotton et al. (2016) found that among college students working towards degrees in early childhood development or education, adult attachment orientation predicted knowledge, attitudes, and skills regarding working with infants, toddlers, and their families. In their study, college students classified as insecure-fearful predicted decreased knowledge of healthy child development, poorer attitudes towards care, and lack of skills. Teachers who do possess insecure adult attachment orientations may face particular challenges in providing sensitive and responsive care. Teachers' insecure adult attachment orientations, derived from their own childhood experiences have been found to negatively affect the quality of their caregiving in the classroom environment (Pallini & Baiocco, 2015; Kesner, 2000) and the ability to use emotional awareness in interaction with others (Fantini-Hauwel, Boudoukha, & Arciszewski, 2012). In one sample of grade-school level teachers, those who possessed an insecure attachment style were more likely to be unconsciously seeking a corrective emotional experience with the children in their classrooms, apparently desiring the bond between themselves and their students to meet an underlying emotional need for affection and feeling cared for (Riley, 2009). This creates a role-reversed dynamic in which the teacher is seeking emotional care from her students, when it is the students who need the teacher to be providing care to them. In such circumstances, Riley (2009) suggests that a teacher might unconsciously perceive misbehavior, non-compliance, or negative moods in her students as a sign of personal rejection and experience this as emotional abandonment. This in turn may lead these teachers to respond in a more harsh manner, rather than accurately interpreting the need that the student is expressing through his or her behavior.

### **Measuring Adult-Attachment**

Several methods for analyzing adult attachment have emerged over the last several decades, all rooted in Bowlby's (1969, 1973, 1980) attachment theory and Ainsworth et al.'s

(1978) attachment classification. George, Kaplan, and Main (1985) developed the *Adult attachment interview* (AAI), in which adult individuals could be categorized into an attachment style based on Ainsworth et al.'s (1978) attachment classifications through a semi-structured interview protocol. The interview centers around the individual recalling experiences from childhood and coding the richness and content of their verbal responses to these memories of early interactions with their parents. Around the same time, Hazan and Shaver (1987) developed a self-report measure of experiences with romantic partners in adulthood. These researchers were guided by the idea of adult romantic relationships being an attachment-like relationship that is an outgrowth of an individual's attachment relationships with primary caregivers early in life.

Bartholomew and Horowitz (1991) developed the *Relationship Questionnaire* that served as an anchoring between these two schools of thought: assessing adult attachment on the basis of a.) early family relationships or b.) current romantic relationships. These researchers created four attachment style *prototypes*, each written out in a short paragraph that pulled from elements of both the AAI (George, Kaplan, & Main, 1985) and Hazan and Shaver's (1987) self-report questionnaire. The individuals taking the assessment would simply read through each prototype and select the one that best seemed to suit their patterns in relationships with others. This measure demonstrated convergence with both previous measures of attachment, and was found to be applicable to family relations and peer attachment styles.

One shortcoming of the Relationship Questionnaire, however, was the inability to analyze its results as a continuous variable, as individuals simply place themselves into one of four categories. Some individuals might fall into extremes of attachment categories, while others might border another style, but that difference cannot be captured when measuring categorically (Bartholomew & Horowitz, 1991). These authors also explained how this could affect reliability

because those who scored as bordering another classification were more likely to categorize themselves differently from one instance of taking the assessment to another.

Brennan, Clark, and Shaver (1998) developed an item response questionnaire that measured adult attachment along the same four-category model as the Relationship Questionnaire, but using two continuous scales: one measuring anxiety and the other measuring avoidance. This measure is known as the Experiences in Close Relationships (ECR) questionnaire. Two years later, Fraley, Waller, and Brennan (2000) revised the ECR, creating the ECR-R. While a subject's score on the ECR-R can be categorized into one of four attachment styles, researchers argue that the two subscales included in the questionnaire, avoidance and anxiety, should be analyzed as continuous variables in order to capture the level at which an individual falls into one category or another (Fraley & Spieker, 2003). The continuous measurement approach has an advantage in better capturing extreme scores. The studies by Fantini-Hauwel and colleagues (2012), as well as those by Ma et al. (2017) and Valloton et al, (2016) illustrate recent examples of the merit and value in being able to delineate adult attachment along the two continuous variables of anxiety and avoidance, as the ECR-R does. Researchers conducted a meta-analysis in which they systematically compared self-report measures of adult attachment, and the ECR was determined to be the most robust predictor of relationship quality in studies where the ECR was used to measure adult attachment style against other variables (Shi, Wampler, & Wampler, 2013).

### **Measuring Classroom Interactional Quality**

A commonly used observational rating scale for early childhood classrooms is the *Infant-Toddler Environmental Rating Scale* (ITERS; Harms, Cryer, & Clifford, 2003). In recent years, however, limitations have emerged in using the ITERS because of its larger focus on structural



elements within the classroom, such as hygiene and classroom materials and more limited focus on interactional processes between the teacher and the children. The *Classroom Assessment Scoring System* (CLASS) was developed as a way to measure classroom quality that zeroed in on the role of teacher-child interactions, and the CLASS-Infant was developed as a method for measuring teacher-child interactions in infant classrooms (Jamison et al., 2014; Lally, 2010; Raikes & Edwards, 2009). It is important to note that the CLASS-Infant is a specific version of the CLASS observation protocol designed specifically to assess infant classrooms and the unique ways they differ from other classroom classifications. Various versions of the CLASS have been developed to target each level within the educational hierarchy; infant classrooms, toddler classrooms, pre-school classrooms, elementary school classrooms, secondary education classrooms, and even post-secondary educational settings have their respective versions. Jamison et al. (2014), the team who developed and introduced the CLASS-Infant to the CLASS observation collection, found in their pilot study of 30 infant classrooms, the assessment demonstrated adequate variability and expected convergent and divergent validity with the ITERS.

Classrooms having higher CLASS scores have proven to be predictive of better student outcome for the students in those classrooms (Downer, Sabol, & Hamre, 2010; Hamre, Hatfield, Pianta, & Jamil, 2014; La Paro, Pianta, & Stuhlman, 2004; Mashburn et al., 2008). These advantages include higher academic skills than those in classrooms with low CLASS scores (Hamre, Hatfield, Pianta, & Jamil, 2014), as well as higher social functioning within the classroom setting (Downer, Sabol, & Hamre, 2010). Additionally, studies found that children in classrooms with higher CLASS scores were more likely to have less conflict with their teachers (Hamre & Pianta, 2005) and improved social skills (Burchinal, Vandergrift, Pianta, & Mashburn,

2010; Curby et al., 2009; Mashburn et al., 2008). To note, these studies found these results in pre-school and elementary school classrooms, where the CLASS has been used for a longer period of time and more research has been conducted to date. Also, in all of these studies, the CLASS was used as an independent variable with student outcomes being the dependent variables. This study will attempt to use the CLASS-infant observation as a dependent variable to explore factors related to the teacher that may impact her performance on the measure.

A highlight of the CLASS observation is the idea of responsive caregiving, which, in the infant classroom, is characterized by observing and reflecting upon the infant's state, considering the infant's cues, individualizing the needs of each infant in care, and supporting development (Perez & Petersen, 2009). As mentioned previously, we know that sensitivity, emotional awareness, reflective function, and serving as a secure base are essential to the development of attachment security and healthy social-emotional development (Bowlby, 1969; Fantini-Hauwell et al., 2012; Fonagy et al., 1991; Hoffman et al., 2006; Leigh et al., 2011). The CLASS-Infant measures classroom quality on the basis of interaction on four dimensions: relational climate, teacher sensitivity, facilitated exploration, and early language support (Jamison et al., 2014).

The dimension of relational climate comprises actions on the part of the teacher that include positive tone of voice, expression of positive, assured emotion, eye contact, smiling, and providing physical closeness in a way that promotes regulation. More specifically, the relational climate dimension measures the teacher's expression of emotion, respect shown by the teachers to the infants, and lack of negativity. Teacher sensitivity measures the teacher's awareness of each infant, her detection of each infant's cues, her availability to provide comfort, her effectiveness at alleviating distress, and the timeliness of her response to the distress. Facilitated exploration assesses the degree to which a teacher supports exploration, learning, and growth

without overly controlling the infant's experience, in other words, her ability to serve as a secure base for the infant, supportive in learning and exploring, while available to provide protection, safety, and comfort. Finally, early language support examines the degree to which the teacher engages in high quality verbal exchanges with the infant that promotes social skill development and verbalization.

### **The Current Study**

Infants experience childcare environments during one of the most sensitive and rapid periods of human development, a time when they are simultaneously developing attachment relationships with their primary caregivers in their home environments. Childcare environments that involve the use of high-quality caregiving, effective teacher interactions, and sensitive-responsiveness to infants and toddlers are likely to mitigate the stress children experience in out-of-home care. High-quality care could also greatly enhance the childcare experience, leading to better outcomes, healthy social-emotional development, and improved school readiness.

Teachers providing high-quality care also have the potential to serve as attachment figures for the children in their care, which, could buffer the effects of insecure attachment relationships between parents and children. Adult attachment orientations have been found to impact teachers' attitudes about their work and the quality of the relationships they have with their students in samples of college-educated professionals (Riley, 2009; Valloten et al., 2016). Teacher education has been correlated with higher quality caregiving (NICHD, 2006), and a professional obtaining a college degree implies a certain amount of motivation, both in the decision to study education and work with child populations and the commitment of time and effort required in order to obtain the degree. The great majority of early childcare teachers,

however, do not possess degrees in higher education, and it is anticipated that these teachers will be the primary focus for the present study.

The purpose of the current study is to examine associations between an early childcare teacher's adult attachment orientation and the observed quality of interactions between herself and the infants in her care. The teachers' capacity for reflective function will also be measured as a complimentary dimension of adult attachment and analyzed in relation to adult attachment and quality of interactions. The teachers' beliefs about infant care will be measured in addition to their observed quality of interaction in an effort to capture the relationship between thought processes and behavioral markers. The conceptual model guiding the current study is illustrated in Figure 2.

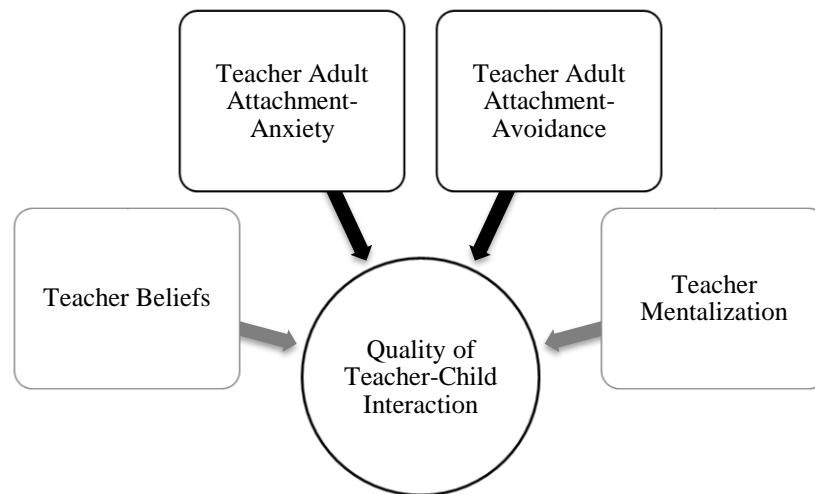


Figure 2: Conceptual model of the current study.

This study will be guided by the following research questions:

1. Does the anxiety level related to the adult attachment orientations of early childcare teachers predict the observed quality of interactions between the teachers and the infants in their classrooms?
2. Does the avoidance level related to the adult attachment orientations of early childcare teachers predict the observed quality of interactions between the teachers and the infants in their classrooms?
3. Are early childcare teachers' abilities to mentalize related to the observed quality of interactions between the teachers and the infants in their classrooms?
4. Do early childcare teachers' beliefs about quality childcare predict the observed quality of interactions between the teachers and the infants in their classrooms?

The following associations among the variables of interest are hypothesized:

1. Higher attachment related anxiety in teachers will be negatively associated with higher quality interactions with infants in their classrooms.
2. Higher attachment related avoidance in teachers will be negatively associated with higher quality interactions with infants in their classrooms.
3. Higher mentalization scores in teachers will be positively associated with higher quality interactions with infants in their classrooms.
4. Higher belief scores in teachers will be positively associated with higher quality interactions with infants in their classrooms.

## Chapter 3: Materials and Methods

### Research Design

The current study used a cross-sectional, correlational design that employed observational and survey methods for data collection.

### Participants

Participants in this study were non-parental early childhood caregivers, or *teachers*, recruited from a sample of licensed childcare centers in two metropolitan areas in the southeastern region of the United States: Jackson, Mississippi and Baton Rouge, Louisiana. The selection of teachers was limited to those who provide care to infants aged 0-12 months of age. Two different sampling techniques were utilized. For the Baton Rouge sample, childcare centers and classrooms were selected using convenience sampling based on established connections and availability. For the Jackson, MS sample, simple random sampling was utilized. All childcare centers within a set geographic radius were identified through internet search engines and an exhaustive list was assembled and randomized. Centers and teachers were contacted in order of their placement in the randomized list and invited to participate. Through this process, thirty-five infant classrooms were procured (N=35). 10 classrooms were from in the Baton Rouge sample, and each had one teacher. 25 classrooms were from the Jackson sample, and these classrooms had varying numbers of teachers.

Classrooms ranged from containing one teacher up to one classroom that contained five. Due to state regulation, the number of teachers in each classroom was governed by the number of infants in the classroom and, in Louisiana, the overall size of the group of infants. In both Mississippi and Louisiana, the maximum ratio allowed was set at 5:1 at the time of this study, meaning no more than five infants were permitted to be in the care of one adult teacher. A

difference between the centers and classrooms in each state was that Louisiana also regulated how many infants in total could be included in each classroom, regardless of the physical size of the classroom or the number of teachers present, which if exceeded, meant the center would have had to allocate another classroom to accommodate additional infants above the maximum amount. In Mississippi, this regulation did not apply. There was no limit to the number of infants in each group as long as the appropriate infant to teacher ratio requirement was met and the physical classroom contained the required number of square feet per child present. In total, the recruitment process yielded 62 infant teacher participants. Eighteen classrooms contained one teacher, eleven contained two, three contained three, two contained four, and one contained five, as illustrated in Figure 3. Due to this variance, data were collected in a nested fashion.

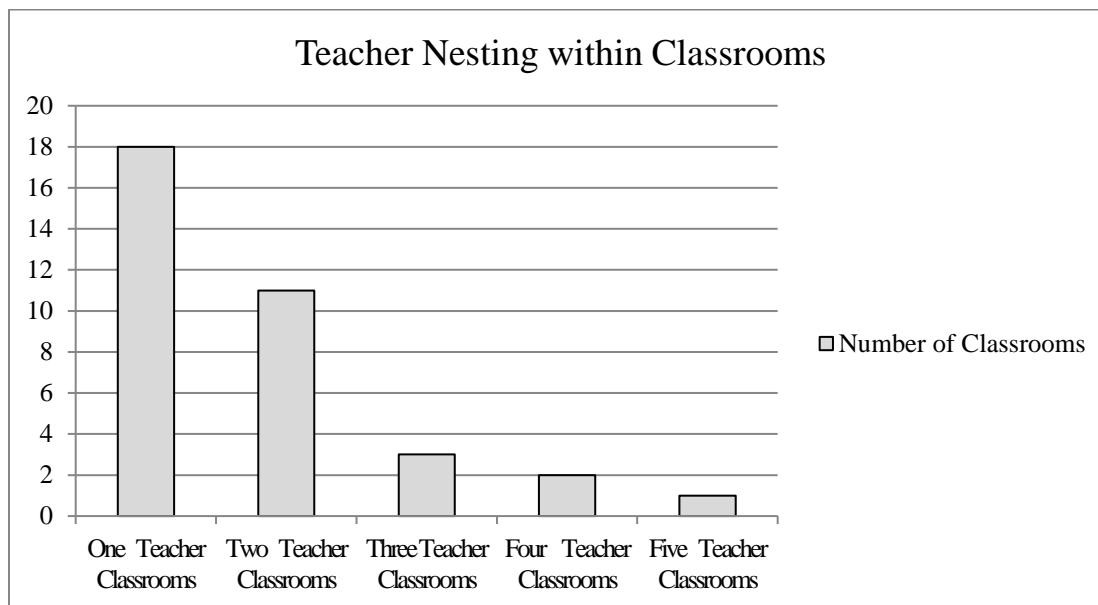


Figure 3: Teacher Nesting within Classrooms.

All of the participants were female. According to 2010 Census data, 92.2% of childcare workers were female (Data USA, 2015). To avoid variance related to the rare case of a male infant teacher, males were excluded; however, no males were identified through the search

process. Among the participants, the reported ages ranged from 18 to 70, with the median age being 37. All participants, having to meet the requirements set forth by state licensing boards, had at least one of the following three qualifications: a high school diploma/GED, a Child Development Associate (CDA) credential, and/or three years of experience working as a childcare provider for non-related children. Beyond that, 19 reported having attended some college, 10 teachers reported having earned an associates degree, and two of the 63 participants reported having earned a bachelor's degree. Whether or not these post-secondary studies were in a field related to child development or childcare is unknown. Fifty-two percent of the teachers were African American, and 35% were Caucasian. Seven participants declined to report their race. The teachers' reported years of experience in childcare ranged from just one year to 55 years, with the median number of years being 11, and the average being 14. In regards to the teachers' years of experience working specifically with infants, the reported years ranged, again, from one to 55 years, with the median being 5 years and the average being 10.

## **Procedures**

Authorization to conduct this study with human subjects was obtained from the Institutional Review Board of Louisiana State University. Once approval was obtained and the list of eligible centers was compiled, the director of each center was contacted and invited to participate as well as to gain permission for the researcher to conduct observations in the classrooms. Once initial contact was made and interest was obtained from both the directors and the teachers whose classrooms were to be observed, directors and teachers were met with as needed to obtain consent and clarify procedures. Consent was obtained, via signed consent forms meeting the requirements of the institutional review board, from both the center directors and the individual teachers participating within the sample. Once consent was obtained, observations and



data-collection was scheduled. Before entering any childcare classroom, the researcher obtained the required personal background checks and presented them to each participating center to review and document for the safety of the children present.

The observational component of the data collection process took place prior to the teacher completing and submitting the questionnaires to ensure the researcher remained blind to teachers' responses on the questionnaire and to prevent bias. Maintaining this order also prevented the questionnaires themselves, which contained thought-provoking, emotionally-focused, and skill-related items, from influencing the teachers' observable interactive behaviors with the infants. To minimize the possibility of acquiescent responding by the teachers due to concern for their responses being exposed to the director, teachers were provided with large sealable envelopes in which to enclose their completed surveys and no personal identifying information was collected on the survey forms. The researcher returned to collect the completed surveys on a separate date to allow the teachers adequate time to properly respond to the survey items. Teachers were given the option to keep their sealed envelop in their possession and hand directly to the researcher if she did not care to have her completed packet in the possession of her director.

Teachers and the centers were compensated for their participation in the study. All participating teachers were eligible to be selected to receive one of several store cards to an easily accessible and affordable superstore, and all centers were entered to receive a store card to the same location.

## **Instruments and Tools of Measurement**

### **Measuring Teacher Adult Attachment**

For this study, the adult attachment orientations of the teachers served as the primary independent variable of interest and it was measured using the *Experiences in Close Relationships-Revised* questionnaire (ECR-R; Fraley, Waller, & Brennan, 2000), a self-report measure with 36 items rated on a 7-point Likert scale (See Appendix A). The ECR-R measured individuals on two subscales, avoidance and anxiety, with higher scores indicating higher level of anxiety or avoidance. For the purposes of this study, each subscale was used in the analyses as an independent variable. According to the authors of the questionnaire, the ECR-R is adaptable to various research settings and study populations, and the wording of the items can be changed to reflect different individual close relationships, such as a romantic partner, parent, or friend, and can even be made more vague, asking participants to think of ‘others’ or ‘people’ without these changes effecting reliability and validity of the scales (Fraley, 2012). For the purposes of this study, the questionnaire items were worded to reflect ‘others’ or ‘people’ in order to glean information about how the teachers experience relationships as they pertain to strangers or people who are more distant to the teacher; the teachers do not personally know the infants in their care, and yet, are needing to quickly form close bonds with them.

### **Measuring Quality of Interaction in the Infant Classroom**

Quality of interaction in the infant classroom served as the dependent variable in this study and was measured using the *Infant Classroom Assessment Scoring System* (CLASS-Infant; Jamison, Cabell, LoCasale-Crouch, Hamre, & Pianta, 2014). The CLASS-Infant is an observational tool used to assess childcare quality through the lens of teacher-infant interactions. In analytical studies, the CLASS-Infant exhibited concurrent, convergent, and divergent validity

with the commonly and widely used observational measure, the *Infant-Toddler Environmental Rating Scale-Revised* (ITERS-R; Harms, Cryer, & Clifford, 2006; Jamison et al., 2014). The reliability of the CLASS-Infant is tied to the inter-rater reliability of the individual coder(s) conducting the observation. In order to be considered a reliable coder, the observer must undergo training in the CLASS-Infant and complete sample coding that meets 80% reliability against the scores of master coders. There are four dimensions examined in the CLASS-Infant, and each dimension is measured on a 7-point Likert scale. Numerical scores are assigned by the observer after three 20-minute segments of observation, notation, and coding in a given classroom. Higher scores indicate higher quality interactions.

The CLASS-Infant is comprised of four dimensions: *Relational Climate*, *Teacher Sensitivity*, *Facilitated Exploration*, and *Early Language Support*. All dimensions will be included in the analysis; however, because the dimensions of relational climate and teacher sensitivity center more around the elements of social and emotional development and the nature of the relationship between the infant and teacher, these two dimensions will be analyzed in relationship to the predictor variables each separately and also aggregated together. The four dimensions, as well as any combination of two or three, are aggregated by averaging the scores achieved on each subscale.

It is important to note that the score achieved through a CLASS observation is a reflection of the overall experience of the infants in the classroom. Through the observation process, no one single teacher is being examined; it is a measure of how the teachers' actions contribute to the overarching climate in the classroom, whether there is a single teacher or several. Therefore, the CLASS is measured at the classroom level.

At the time of this study, the CLASS observation was the official observational protocol used by the state of Louisiana's regulatory boards to grade early childcare centers, which involved the teachers and center directors receiving training on how to improve their performance as it pertained to the CLASS. However, implementation began with preschool classrooms and had yet to be implemented with the infant classrooms prior to this study's observations. Therefore, no infant teachers had received training on improving performance on the CLASS-Infant in advance of their being observed. Such prior training could have affected their performance in this study.

### **Measuring Teacher Reflective Function**

The teachers' capacity for reflective functioning, or mentalizing, was another independent variable examined, and it was measured using the Mentalization Scale (MentS) (Dimitrijević, Hanak, Dimitrijević, & Marjanović, 2018). The MentS is a 28-item 5-point Likert scale where higher scores indicate a higher capacity for mentalization. This new scale was tested in both community and clinical samples and demonstrated good internal consistency and reliability in the community sample and acceptable internal consistency and reliability in the clinical sample. It is well documented that patients with Borderline Personality Disorder (BPD) often demonstrate low capabilities for mentalization and reflective function, and the clinical sample that had been diagnosed with BPD scored significantly lower on the mentalization scale than their non-clinical counterparts (Dimitrijević et al, 2018). This study will involve a non-clinical, community sample, so the mentalization scale will be appropriate.

### **Measuring Teacher Beliefs**

Teachers' beliefs about appropriate infant care were another independent variable examined in this study, and it was measured using the *Beliefs about Infant Toddler Education*

*and Care* questionnaire (BAITEC; Anderson, 2015; Anderson & McMullen, 2013) (See Appendix C). The BAITEC was created on the basis of well-documented guidelines supportive of quality infant care, and was developed as an answer to previous teacher belief questionnaires, such as the *Belief and Intentions Questionnaire* (Wilcox-Herzog & Ward, 2004), which examines preschool teachers' beliefs of three to five year old children. The BAITEC's purpose was to extend a measure of teacher belief down to the infant and toddler teacher population. The BAITEC is 23-item 5-point Likert scale. A higher score indicates greater alignment of the subjects personal beliefs with evidenced based practice. Through reliability and validity analysis, the BAITEC was found to have content, criterion-related, construct, and convergent validity (Anderson, 2015). Cronbach's alpha of .86 confirmed reliability of the scale. The way the self-report measure for teacher beliefs and the other independent variables will be analyzed in relation to the CLASS observation is modeled in Figure 4.

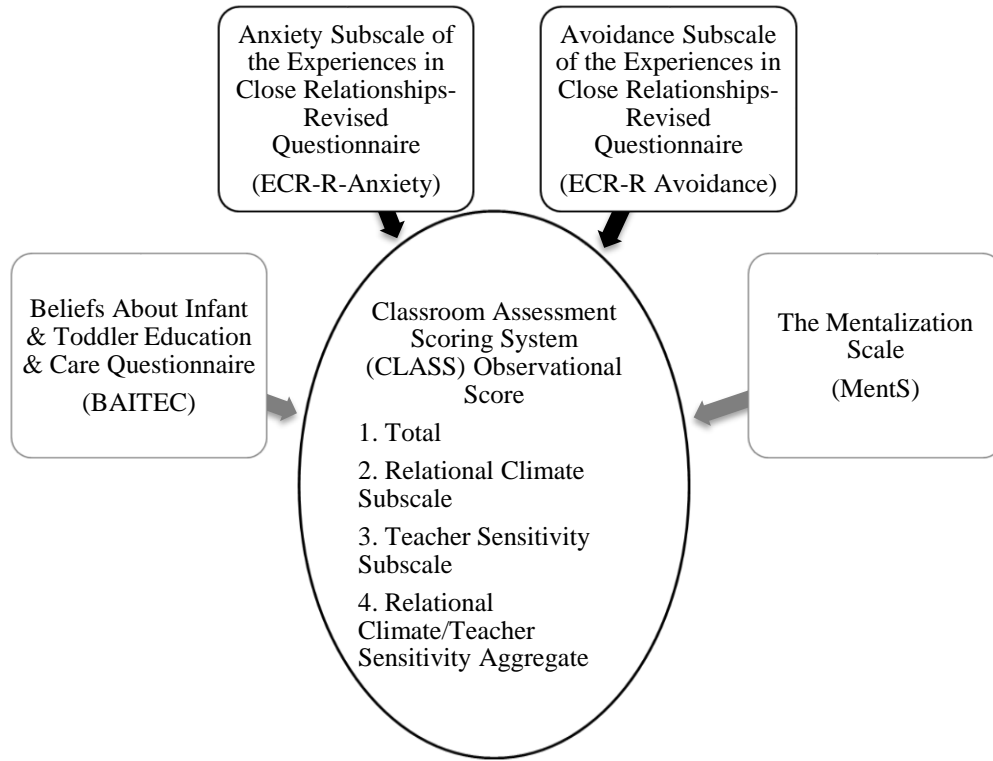


Figure 4: Operational Model of the Current Study

## Analysis

Upon completion of the observations and the data collection process, the data were analyzed using multiple regression analysis. Correlation matrices were generated for the sociodemographic variables collected and the independent variables. Regarding missing values, only one classroom was excluded altogether from the analysis because it was a single-teacher classroom and she failed to complete the survey measure post-observation. Three other teachers in classrooms with multiple teachers failed to complete survey measures. One did not complete the ECR-R, BAITEC, or MentS, and two teachers completed the BAITEC, but not the other two questionnaires. No two teachers with missing values were housed in the same classroom. These

missing values were manually imputed by using the mean score of the other teacher(s) in these classrooms on the same measure in place of the missing value.

Due to the nested nature of the data, where multiple teachers were often housed within a single classroom, teacher-level data was aggregated to the classroom level. The CLASS observation was a score of the classroom environment, not connected to any one or more teachers in the classroom; therefore, in classrooms where multiple teachers were working, the teachers' scores on the ECR-R, MentS, and BAITEC were aggregated using averages in order to perform the analysis.

## Chapter 4: Results

### Descriptive Analysis

Analysis of the sociodemographic information collected regarding the variables of teacher age, years of experience in childcare, and years of experience in infant care were, as logically expected, all highly correlated with one another. No significant associations were identified between ethnicity, education level, or years of experience in infant care and scores on the independent variables of the BAITEC, ECR Subscales, or the MENT. (Analyses to determine covariation of demographic variables with the CLASS were not performed because the CLASS is not a measure of individual differences, but rather a composite index of observations of all teachers in a given classroom).

The following descriptive statistics for the predictor variables, measured at the level of the individual teacher, resulted from the analysis (Table 1). The original *Beliefs about Infant and Toddler Education and Care* (BAITEC) questionnaire was reduced by five items due to inadequate internal consistency (see Appendix C). With this edited version, the minimum possible score was 18 and highest possible score was 90. Scores for the sample had a range of 33 points with the lowest score being 38 and the highest score being 71 (N=60). Two teachers failed to complete the BAITEC. The mean score was 50.27 ( $SD = 8.31$ ). Cronbach's alpha for the amended BAITEC was .74.

For the *Experiences in Close Relationships* (ECR-R; Appendix A) questionnaire, both the anxiety and avoidance subscales had a minimum possible score of 18 and a maximum possible score of 126. The range for the anxiety subscale (ECRANX), was 87 points with the lowest score for the sample being 22 and the highest being 109 (N=58). Four teachers failed to complete the ECR-R. The mean score for the anxiety subscale was 46.16 ( $SD = 18.84$ ). The range for the



avoidance subscale (ECRAVOID) was 82 points with the lowest score for the sample being 24 and the highest score being 106 (N=58). The mean score for the avoidance subscale was 59.60 ( $SD = 15.79$ ). Cronbach's alpha for the ECR-Anxiety Subscale was .90, and the Cronbach's alpha for the ECR-Avoidance Subscale was .83.

For the *Mentalization Scale* (MENT; Appendix B), the minimum and maximum possible scores were 28 and 140 respectively. The range of scores for the sample was 59 points, with the lowest score being 81 and the highest being 140 (N=58). The mean score for the sample was 103.84 ( $SD = 12.17$ ). Four teachers failed to complete the MENT. Cronbach's alpha for the MENT was .78.

Table 1: Descriptive Statistics for Predictor Variables

Variable	N	Range	Mean	Standard Deviation	Cronbach's Alpha
BAITECEDIT	60	33	50.27	8.31	.74
ECR-Anxiety	58	87	46.16	18.84	.90
ECR-Avoidance	58	82	59.60	15.79	.83
MENT	58	81	103.84	12.17	.78

For the dependent variable of the CLASS observation, which was measured at the level of the classroom, the following descriptive statistics were identified (Table 2). Thirty-five classrooms (N=35) were included in the analysis. The CLASS observation ranges from 1 as the lowest possible score to 7 as the highest. The range of scores for the sample on the CLASS with all four dimensions combined (CLASSTOT) was 4.38 points. The lowest overall score earned was a 2.31 and highest was a 6.69. The mean total score was 4.142, with a standard deviation of 1.036. For the sub-dimension of *relational climate* (CLASSRC), the range for the sample was 4.25 points, with the minimum score being 2.75 and the highest being 7.00. The same range, as well as the same minimum and maximum scores, were found for the *teacher sensitivity* sub-dimension (CLASSTS). The mean relational climate score 4.986, with a standard deviation of

1.120. The mean score for the teacher sensitivity sub-dimension was 5.371, with a standard deviation of .993. For the combined relational climate and teacher sensitivity aggregate score (CLASSRCTS), in which the two dimensional scores were averaged for each classroom, the range of scores was 3.88 points, with 3.13 being the lowest and 7.00 being the highest. The mean RCTS score was 5.179, with a standard deviation of .996.

Table 2: Descriptive Statistics for CLASS Dimensions

Variable	N	Range	Mean	Standard Deviation
CLASSTOT	35	4.38	4.14	1.04
CLASSRC	35	4.25	4.99	1.12
CLASSTS	35	4.25	5.37	.99
CLASSRCTS	35	3.88	5.18	1.00

The data were found to be normally distributed (Appendix D) and homoscedastic (Appendix E). Values were imputed for the missing data points by using the mean score for the other teachers in the classrooms with missing data. Individual teacher scores on the predictor variables were aggregated for analysis at the classroom level, by averaging in classrooms with multiple teachers.

### **Bivariate Correlational Analysis**

Upon examining the bivariate relationships among the predictor variables after imputation for missing values (Table 3), a negative correlation was identified between scores on the mentalization scale for the sample and the avoidance subscale of the experiences in close relationships questionnaire,  $r(59) = -.35, p < .05$ , meaning that as subjects' capacities for mentalization increased, their reported levels of avoidance decreased. A moderate positive correlation was found between scores on the avoidance and anxiety subscales of the ECR,  $r(59) = .26, p < .05$ . Neither correlation was of a level indicative of a potential issue of multicollinearity among the predictor variables. The model also had low variance inflation

factors of 1.10, 1.13, 1.18, and 1.15 for the BAITEC, Anxiety Subscale of the ECR, Avoidance subscale of the ECR, and the MENT scales respectively, also indicating a low probability of multicollinearity.

Table 3: Bivariate Correlational Analysis

Variable	1	2	3	4	5	6	7	8
1. CLASSTOT	—							
2. CLASSRC	.92**	—						
3. CLASSTS	.87**	.78**	—					
4. CLASSRCTS	.95**	.95**	.94**	—				
5. AVGBAITECEDIT	-.25	-.31	-.28	-.32	—			
6. AVGECRANX	-.01	-.01	.07	.03	-.29	—		
7. AVGECRAVOID	.22	.10	.27	.19	-.24	.19	—	
8. AVGMENT	-.02	.02	-.24	-.10	.15	.15	-.35*	—

\* $p < .05$ . \*\* $p < .001$ .

In examining the bivariate relationships among the CLASS and its dimensions, the sub-dimensions of relational climate (CLASSRC) and teacher sensitivity (CLASSTS) were strongly correlated ( $r(33) = .78, p < .001$ ). To eliminate redundancy, the aggregated CLASS RCTS was used as the dependent variable alone in the subsequent regression analysis. Total CLASS score (CLASSTOT) was also not used to reduce redundancy with its strong correlation to the individual CLASSRC and CLASSTS domains and the RCTS aggregate score. This also allowed the analysis to focus on the domains of the CLASS scores that pertained more pertinently to the concepts of responsive caregiving and sensitivity.

### Regression Analysis

The following results were found for the multivariate regression analysis, measures at the classroom level ( $N=35$ ; Table 4). This study posed four research questions and hypotheses. It

was predicted that teacher scores on the ECR subscales of anxiety and avoidance, as well as teacher scores on the BAITEC and Mentalization scale would be related to outcome scores on CLASS observation scores. Hypotheses 1-4 were not supported by the data analysis (Appendix F).

Table 4: Regression Analysis Summary

Teacher Characteristics Predicting CLASS Observation Scores (CLASSRCTS)					
Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>
AVGECRANX	-.01	.01	-.09	-.49	.63
AVGECRAVOID	.01	.01	.12	.63	.54
AVGBAITECEDIT	-.05	.03	-.31	-1.66	.11
AVGMENT	.00	.02	-.03	-.13	.89

*Note.*  $R^2 = .119$  (N=35). Adjusted  $R^2 = -.002$

In follow-up, the analysis was run again with the Mentalization Scale removed from the analysis to control for any affects that may be the result of the moderate covariance between the MENT and the avoidance subscale of the ECR. This alteration did not amount to a significant change in the results of the analysis. The teacher sensitivity and relational climate domains were run in their own individual regression analyses as the dependent variable, and neither analysis demonstrated a pattern of association. Additionally, the single-teacher classrooms with only one teacher present were separated from the rest of the sample and the analysis was run again to determine if any effects would be evident with a one-to-one data point scheme between the predictor and outcome variables. Neither did this extraction result in any significant associations among the variables.

One additional phenomenon observed was a moderate positive correlation between the ratio of teachers to infants in the classroom and the classrooms score on the relational climate subscale of the CLASS observation in this sample of infant classrooms,  $r(33) = .37, p < .05$ . This meant that as the number of infants in the room increased per teacher, the teachers' performances on relational climate increased.

## Chapter 5: Discussion

### Summary of Findings

This study set out to answer the question of whether or not emotional characteristics related to an early childcare teacher's adult attachment orientation, specifically her self-reported levels of anxiety and avoidance, would be associated with the quality of classrooms interactions with infants. The study also aimed to examine whether the teacher's capacity for mentalization and her beliefs about appropriate infant care would be associated with the quality of classrooms interactions. It was expected that these variables would be predictive of interaction quality; however, the results indicated no clear pattern of association between a teacher's characteristics of anxiety and avoidance as they pertain to her adult attachment orientation and the quality of classroom interactions. Likewise, no clear pattern of association was identified between the measures of teacher mentalization and teacher beliefs about infant care and quality of interactions. The hypotheses proposed in this study were not supported by the results of the data analysis.

For this sample, as a teacher's capacity for mentalization increased, her reported symptoms of avoidance decreased. This negative correlation between teachers' mentalization and emotional avoidance on the ECR-R ( $r = -.44$ ,  $p < .05$ ) supports the convergent validity of these measures and confirms that the constructs on which these instruments are based capture a conceptually meaningful aspect of emotional experience.

While no other studies exploring these specific variables have been conducted at the time of this study, this study's relation to a similar dissertation is worth discussing. In an unpublished doctoral dissertation, Jurie (2011) studied childcare teachers' reflective function in relation to classroom scores on the Infant Toddler Environmental Rating Scales (ITERS), the other widely

used classroom observational tool. This researcher collected data on the independent variable of reflective function using an interview protocol with the teachers. She did not find any pattern of association in her study. In her suggestions for future research, she speculated whether the ITERS' increased emphasis on logistical and environmental elements of the classroom and decreased emphasis on interactions, as compared to the CLASS, might have impacted her results. She wondered if using an observational tool that focused more heavily on interactions would yield different results. This study utilized the CLASS, rather than the ITERS, and similarly did not find associations between teacher mentalization and classroom observational scores, nor with the additional predictor variables of attachment and beliefs.

## **Implications and Considerations**

### **Observations of Interactions**

CLASS observations result in classroom scores derived through a myriad of possible behavioral pathways on the part of the teacher(s) present during the observation window. Conveying the nature of the interactions that comprised the observations obtained in the present study can be done so by illustrating some noteworthy examples. The wide variety of ways in which a particular score may be determined is most starkly evident in classrooms with multiple teachers. The following is two examples of similar classrooms, each with two teachers and a similar number of infants, yet, the coding process reveals great divergence between the two.

One of the classrooms observed contained two teachers and eight infants. Both teachers interacted with the infants, but at starkly different levels of quality. One of the teachers exhibited high levels of sensitivity to the infants' needs and provided a comforting relational climate by promptly providing bottles or food when the babies seemed hungry. She sat on the floor with the babies allowing them to approach her and sit on her lap as they wished. She spoke warmly to

them and followed their lead, playing with the toys they seemed interested in and scaffolding their continued interest with encouragement. At the same time, the other teacher exhibited low-quality interactions with the same group of babies. She sat in a chair further away from them and would not pick them up and hold them when they approached seeking proximity to her. At one point, while sitting and feeding an older infant her solids, she spoon-fed her while staring off in a detached way, only speaking the occasional, “come on, take another bite” with a tone of frustration. Later, when both teachers were helping the infants settle for naps, she sat and allowed babies to cry and fuss for a significant amount of time while the other teacher worked to go from crib to crib, rubbing backs or soothing the babies. The teachers were not assigned certain babies, they were all cared for via the combined efforts of these two teachers, meaning that at times they experienced warmth and sensitivity and at other times they were ignored and encountered only the flat affect of their caregiver. While the extremes of high and low-level interactions were taking place during that window of time, the coding of interactions targeted the average experience of the majority of the infants, which resulted in a final score in the mid-range.

In another classroom with two teachers and six infants, the teachers were doing very different things during one individual segment during this particular classroom observation, but the final score for that segment landed in the high range. One teacher played with the babies on the floor. The other conducted managerial tasks, such as preparing bottles and food, completing the infants’ charts, and doing necessary cleaning. Although her actions were contributing to classroom sensitivity and responsive caregiving because she was preparing the bottles in direct response to infants’ hunger queues and proactively anticipating the forthcoming hunger queues of others, she was not verbally or physically interacting with them. The teacher on the floor



would allow the babies to approach her and she would cuddle them. She played with them, and when one infant became upset and began crying over something that happened, she went to him and attended to him gently and in a way that resolved the distress and helped him to return to his play. She divided her attention evenly amongst the babies, even the ones who were too little or not mobile enough to approach her themselves. She displayed warmth and responsiveness, and the infants seemed comfortable and at ease with her. The average experience of the majority of the infants in the room was of a high quality, and the scores and coding reflected that, even though only one of the teachers was directly interacting with the babies during the specific window of time that the observation took place.

Classrooms scored in the low range for a variety of reasons, but there was a noticeable pitfall that seemed to occur frequently that tended to impede higher scores, and that was the volume of managerial and non-interactive tasks that the teachers were having to manage while also attending to the physical needs of the infants. For instance, while the infants regularly need to be changed or fed, managerial tasks such as organizing, cleaning, and documenting activities are simultaneously required by regulatory entities or the center director and parents. In many instances, even if a teacher had wanted to be or would have been interacting with the infants otherwise, she simply couldn't due to other job constraints and obligations. There are ways to incorporate the elements of relational climate and sensitivity into tasks that involve the babies; feeding and changing the infant is, in itself, a method of demonstrating sensitivity and responsiveness to needs, and teachers are given credit for those efforts in the coding. The problem is that while attending to one or a few, others are invariably being ignored. Even if a teacher was interacting with the infants while simultaneously completing other tasks, her attention being divided almost always impeded the interaction from reaching the richness it

might have otherwise possessed if the teacher could have singularly focused on her interactions with the babies.

Differences in the teachers' quality of interaction could have been related to factors that this study did not examine. Training is one that would be important to consider because the CLASS is commonly used to grade classrooms for governmental regulatory purposes. Directors get trained in how to improve their teachers' performance and then the teachers often receive training in how to improve their scores. As was mentioned in the methods section, in the geographical regions of Louisiana and Mississippi where the data were collected, the CLASS-Infant had not been implemented in either location. At the time of this study, Mississippi was not using any formal observational tool for grading classroom quality. Louisiana was using the CLASS to measure quality in early childcare settings, but not yet with infants. The pre-school and toddler CLASS model had been implemented, but the CLASS-Infant was still to be introduced. None of the infant teachers had received formal training in the CLASS-infant specifically, but teachers' classroom assignments in childcare centers are often fluid. They may work in one age-specific classroom for a while and then transition to another room based on need or desire. Sometimes teachers may work different parts of a single day in multiple rooms based on needs, so just because they didn't receive training in the CLASS-Infant doesn't mean they haven't received training in the other CLASS models or aren't at least familiar with them. While each CLASS protocol targets interaction quality using age-appropriate benchmarks, the concepts of relational climate and teacher sensitivity are universal within the overarching construct of the CLASS model. In the set of Louisiana classrooms where the CLASS is already being used in the centers, what a teacher may have learned via training in the toddler or preschool CLASS could have influenced her work with the infants.

Even though the teachers were unaware of the type of observation they were undergoing and the CLASS was not utilized in Mississippi at the time of this study, the reality of being observed raises concerns as to what extent there may have been an observer effect, or Hawthorne Effect in this study. With the focus on quality early childcare growing stronger in our culture over time, childcare centers and classrooms are increasingly being subjected to observation, either for research or governmental regulatory purposes. The pressure to perform well and the fear of poor performance potentially affecting teachers' job security could have led to inflated performance above what might have naturally occurred outside of the parameters of being observed.

### **The Role of Training and Professional Development**

The lack of significant relationships identified between the emotional characteristics of the teachers and their interactions in their classrooms leads to new questions. The teachers enter into their role as the caregivers for the infants in their classroom with their own emotional legacy that they have developed over their lifespan. The components of their emotional legacy examined in this study were elements pertaining to the adult attachment orientation they have developed since the earliest stages of their own infancy, that are likely to have remained constant over time to varying degrees in relation to their subsequent life experiences. Their capacity for mentalizing in relation to others was also examined, as well as their personal attitudes and beliefs about infant care, which each person curates over time via their own life experiences and the knowledge they have acquired.

Research regarding mothers and the dyadic relationships they foster with their children has shown that the emotional legacy of the mother, including her adult attachment orientation, her level of anxiety and avoidance, and her ability to mentalize, shapes the ways she interacts

with her infant and the accompanying attachment relationship that is formed. In this sample of teachers, there were many who, despite higher scores on the measure of anxiety and avoidance, performed at a high level in the classroom, creating a relational climate and secure relationships with the babies in their care. For others with high anxiety or avoidance, the opposite appeared to be true. Something allowed some of the teachers to know what the positive approach to infant care was and effectively execute these skills in practice despite the personal emotional challenges they reported in the questionnaires.

If a teacher's emotional well-being and characteristics of her state of mental health do not necessarily predict how she will interact with the infants she cares for, consideration should be given to the role that knowledge and experience play and whether training might be sufficient to enhance the performance of early childcare workers in their classrooms and the quality of care the babies receive in their daily experience of childcare. In a meta-analysis examining studies aimed at targeting attachment interventions between mothers and children, Bakermans-Kranenburg, van IJzendoorn, and Juffer (2003) found that brief, behaviorally focused interventions had the largest impact on improving maternal sensitivity, which is a critical component in the development of secure attachment bonds in parent-child dyads. In studies where mothers were exposed to interventions in which they learned about attachment theory, how attachment relationships are formed, and the importance of sensitive responsiveness in the first year of life, these mothers were able to change their behavior in a way that lead formerly insecure mother-infant dyadic relationships to transform into secure relationships post-intervention, with the mothers exhibiting significantly higher levels of sensitivity with their babies without the mother having to go through more intensive therapeutic interventions (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003). An intervention tested by Van den

Boom (1994) targeted maternal sensitivity specifically and was successful at improving several elements, including maternal behaviors related to attunement, higher rates of cognitively sophisticated exploratory behavior on the part of the infant, reduced infant distress, and improved attachment security at 12 months of age as compared to a control group that did not acquire these same gains. Increasing knowledge base alone was enough to curb detrimental trajectories and improve care. Might the same be true in the extra-familial caregiving arena?

In an experimental intervention study, Biringren (2012) found that training childcare providers improved their emotional availability, their score on the attachment q-sort with a designated child, and their classroom interactions. The intervention provided information and practical application on the concept of *emotional availability*, and each teacher in the experimental group had an emotional availability coach who provided them with knowledge and guided them in their application of the information provided in practice.

### **Policy Implications for Increasing Educational Requirements**

In determining factors that seem to be related to higher quality care, researchers have found that teachers having higher levels of education in fields such as child development or early childhood education demonstrated higher effectiveness and argue that teachers holding such degrees should be a baseline standard and starting point when wanting to improve quality (Goble & Laurin, 2016). This logically makes sense, but with the current system in which early childcare operates in our communities, this standard cannot be feasibly obtained.

Outside of some limited availability for public preschool and Head Start, early childcare in the United States is largely comprised of privately owned childcare centers, where the center is owned by the director or another party and parents pay for their children's care. The center is a business and serves as the owner's income source. This is especially true for infants and toddlers,

where there are virtually no public childcare options. Early Head Start is a service that provides care for children under 3 years of age, but not all communities have Early Head Start available, and those that do can only accept a certain amount of children, leaving a large swath of parents without that option. Parents need the childcare in order to work and are limited by what they can afford. Center directors need to be able to cover the cost of running the center, while keeping rates at a level that will allow parents to enroll their children. Being a childcare worker in a daycare center is considered unskilled labor and is usually minimum wage employment. If directors were to try to hire teachers with more formal education, they would have to pay the teachers more, which would drive up the cost of the childcare. Most parents would no longer be able to afford the care. Further, from a social justice perspective, families of low socio-economic status are often limited to whichever childcare options accept childcare assistance funds or whichever are offered at a price they can afford, leaving them with little to no ability to be selective in terms of quality. For the educational standards of early childcare teachers to rise, public funding would be required, which is a political problem.

### **Teacher Self-Awareness**

Another question suggested by the analysis regards the concept of self-awareness and the role that may or may not play in both parental and extra-familial caregiving quality. Self-awareness, defined as the conscious knowledge of one's own character and feelings, is an essential component in the ability to mentalize and react to and engage with others in healthy ways. Based on observations of a few of the teachers, it appears the ECR-R questionnaire might have touched on some deep-seated emotional sensitivity too painful to address directly. For a person to acknowledge one of these very pointed items as being a challenge for her and being able to decipher the degree to which it applies requires the following: She is able to entertain the

idea without being intimidated by the question, she can identify and take ownership of the challenge, and she is able to decide the degree to which that challenge persists for her in relation to other challenges. It's important to keep in mind that many of the challenges addressed in the ECR-R are likely to be things that would not be easy for most to talk about or even admit to themselves; these are often things that take long-term therapeutic interventions for some people to fully acknowledge in themselves. So for a teacher to be able to answer questions such as these on a survey indicates she is aware of that personal challenge. Being aware of personal challenges is the first step to being able to take appropriate actions to mitigate the potential effects of that challenge, so perhaps those who are more self-aware are then able to consciously alter what might be their impulsive response to a stimulus into a healthier one. The absence of this sort of self-awareness is also consistent with our understanding of emotional avoidance. It may be that the scoring of the ECR should systematically include a way to assign high avoidance scores to people who obviously refuse to engage with the questionnaire or answer the questions with openness and honesty.

### **Ecological Validity of the ECR-R**

Of the 3 self-report instruments, the ECR-R appeared to be the one that provoked the strongest reactions among teachers. Missing data on the ECR-R were much more common than on the other measures. One teacher answered both the beliefs questionnaire (BAITEC) and the mentalization scale (MENT) with apparent honest responses, but failed to answer the ECR-R, despite its position in the center of the packet, indicating this teacher's intention to not respond to it. In a couple of scenarios, the beliefs questionnaire was completed and then both the ECR-R and the MENT were left blank. For one case like this, the first three or four questions on the ECR-R were completed and then the teacher ceased answering. In a similar case, the first few

questions were answered, but then the teacher not only stopped answering, but also drew a big X over the questionnaire, with an extra X over the answers she had already provided.

In other cases, the questionnaire was nominally filled out, but obviously without honest responses. One teacher answered the first several questions apparently with realistic responses and then switched to answering 4's (the neutral mid-point response) all the way down for the remainder of the questionnaire. Several teachers did, in fact, complete the questionnaire, but wrote out complaints about it for the researcher to read. One said, "these questions have nothing to do with infant care." In two other cases, the teachers wrote a similar message on both the ECR-R and the MENT, saying, "these questions are not relevant." In all fairness, prior to the observations teachers were not given a large amount of detail about the exact questions they would be asked in the surveys in order to prevent the content of the questions from altering their behavior or performance. Nevertheless, the questions on the ECR appear to have elicited strong aversive reactions among several teachers. Its questions are of a personal nature that focus on common experiences in close relationships. Examples include: "It's easy for me to be affectionate with people," "I'm afraid that I will lose people's love," and "I'm afraid that once people get to know me, they won't like who I really am." It appears that for some people, these questions provoked discomfort and even irritation. These observations prompt questions regarding the ecological validity of the ECR-R with the sample population in the study. The majority of sample participants were African American, and no prior studies specifically validating the instrument with African Americans have been conducted as of the time of this study.



### **Infant-Teacher Ratio**

The finding of the ratio of infants to teachers increasing being associated with higher relational climate scores was unexpected, as this implies that teachers performed better on relational climate when they each had more infants to be splitting their attention between. It is important to note that a particular event occurred during the data collection phase that may have impacted this. During the last few weeks of observations, a pretty serious outbreak of RSV spread among the childcare and school facilities in Mississippi. This caused many babies to be absent, so there were several classrooms with teachers who were accustomed to having more infants present that just did not have as many on the day of the observation. How this change in routine may or may not have impacted the teachers' performance is unclear.

### **Limitations**

This study was limited, first, by its small sample size. Conducting studies using live observational protocols is, by nature, time-intensive and requires significant buy-in, commitment, and a willingness to partake in an experience that may be intimidating on the part of those being observed, especially where multiple community stakeholders have an interest. With the resources available and the parameters of geographical accessibility related to this current study, sample size was limited to the availability of willing childcare center directors and teachers. This reality restricted the potential statistical power of the analysis.

The small sample size also affected the second limitation, which was the inconsistently nested nature of the sample participants in the infant classrooms. The CLASS observation protocol results in a score that reflects the overarching climate within a classroom and is intended to be representative of the average experience of the majority of the infants in the room, regardless of the number of teachers present or who is doing what during the window of

observation. With some classrooms containing just one teacher, while others contained upwards of four or five, a one-to-one score linking teacher predictor variables to quality of interaction was not available for all teachers and required the predictor variable scores in the classrooms with multiple teachers to be aggregated in order to analyze the results at the classroom level. How the strengths of one or more teachers and the weaknesses of others may have related to their individual scores on the predictor variables was indeterminable. With a larger available sample, it may have been possible to exclude classrooms with multiple teachers in order to control for the ways this was possibly confounding the results. While a very small portion of the observed sample was able to be extracted for a separate analysis using only single-teacher classrooms, a larger sample of single-teacher classrooms could have provided more statistical power.

### **Suggestions for Future Research**

Future research should study the ways that teachers who may present with clinical levels of anxiety or avoidance may interact with the children in their care. For the current sample, while there was substantial variance in the range of responses received on the ECR-R, only a few scored above a 72 on either subscale, which is considered the threshold at which a subject moves into the realm of insecurity as it pertains to anxiety and/or avoidance, and those who were did so only by a few points. How the nature of interactional quality differs in a clinical sample of teachers is indeterminable with this current study but could be important in determining factors that might impact a child's experience in the childcare environment. Also in regards to the ECR-R, additional validation studies with multiple ethnic and cultural groups could be useful in order to be able to select the best adult attachment instruments for research purposes within various population parameters.

Use of qualitative methods to interview teachers to gain more knowledge on their thoughts about infant care as well as their experiences could be useful. In cases where the unexpected finding was stark, being able to glean more information about those teachers' background, attitudes, and experiences that led to and inform her work as a childcare provider could be useful in formulating new research questions.

While there is an abundance of research found in the literature about the benefits of quality child care and the detriments of poor quality care, which are outlined elsewhere in this study, other than the one example mentioned previously (Biringren, 2012), there is a limited amount of literature regarding effective trainings for childcare workers as they specifically pertain to social-emotional and relationship quality outcomes in the early childhood education and childcare fields. More intervention research into effective trainings for childcare workers that improve sensitivity and teacher-child relationships could be useful in furthering childcare quality in the social emotional domain.

Another suggestion for future research would be to explore systematic aspects of the childcare field that might be impacting quality of interactions and teach-child relationships. These elements would include teacher job satisfaction, childcare center teacher turnover rates, and teacher burnout. Studies could also examine issues related to the work climate and experience, such as the teachers' sense of being supported by the director, quality of the teachers' relationships with the director and her fellow teachers, teacher pay, and teachers' access to training and learning opportunities.

Observational studies of teachers' interactive behavior with the children in their care are potentially an important tool in furthering our understanding of quality of care in preschool settings. Most of the research with the CLASS has treated it as an independent variable to predict

individual children's well being or achievement in classrooms. This study attempted to use it in a novel way to better understand the contributions of individual teachers' relationship experiences to the quality of care they provide. Unfortunately, the CLASS cannot provide this information at the level of the individual teacher. Utilizing it in samples with only single teacher classrooms might provide a way to use it as an outcome variable while examining factors at the level of the individual teacher. Controlling for the classroom ratio by standardizing the ratio level of classrooms included in the study might also be valuable. It would allow these variables to be examined while taking into account the differences in CLASS scores that could occur due to the natural strain placed on teachers with increased workloads. Similarly, observational instruments, such as perhaps an adapted version of the CLASS, with the capability to collect data at the level of the individual teacher might be particularly valuable in future studies directed at questions concerning the contributions of the experience of individual teachers to the quality of care found in their classrooms.

Extra-familial childcare in the early childhood years has become the norm for children in the United States and around the world as mothers continue to participate in the workforce more and more and in greater capacities. With children being cared for by childcare workers from the first few weeks of their life and for a significant amount of time each week, it is essential that the care being received is of high quality and does not serve as a detriment to the child's development or mental health. In many ways, research has identified what constitutes high quality early childcare, but more research is warranted to determine the most effective ways to arrive at those ideals.

## Appendix A: Experiences in Close Relationships Questionnaire

### Questionnaire #2

**PLEASE DO NOT PUT YOUR NAME ON THIS FORM. Your responses are completely confidential and anonymous.**

Directions: The statements below concern how YOU feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by circling a number to indicate how much you agree or disagree with the statement

**1=Strongly Disagree 2=Disagree 3=Somewhat Disagree 4=Neither Agree nor Disagree  
5=Somewhat Agree 6=Agree 7=Strongly Agree**

- 1 2 3 4 5 6 7 It's easy for me to be affectionate with people.
- 1 2 3 4 5 6 7 I'm afraid that I will lose people's love.
- 1 2 3 4 5 6 7 I'm afraid that once people get to know me, they won't like who I really am.
- 1 2 3 4 5 6 7 I often worry that others don't really love me.
- 1 2 3 4 5 6 7 I worry that people won't care about me as much as I care about them.
- 1 2 3 4 5 6 7 I worry a lot about my relationships.
- 1 2 3 4 5 6 7 When people are out of sight, I worry that they might become interested in someone else.
- 1 2 3 4 5 6 7 When I show my feelings for people, I'm afraid they will not feel the same about me.
- 1 2 3 4 5 6 7 I prefer not to be too close to people.
- 1 2 3 4 5 6 7 I rarely worry about people leaving me.
- 1 2 3 4 5 6 7 People make me doubt myself.
- 1 2 3 4 5 6 7 I find that people don't want to get as close as I would like.
- 1 2 3 4 5 6 7 Sometimes people change their feelings about me for no apparent reason.
- 1 2 3 4 5 6 7 My desire to be very close sometimes scares people away.
- 1 2 3 4 5 6 7 It makes me mad that I don't get the affection and support I need from people.
- 1 2 3 4 5 6 7 I worry that I won't measure up to other people.
- 1 2 3 4 5 6 7 People only seem to notice me when I'm angry.
- 1 2 3 4 5 6 7 I prefer not to show people how I feel deep down.
- 1 2 3 4 5 6 7 I find it difficult to allow myself to depend on people.
- 1 2 3 4 5 6 7 I am very comfortable being close to people.
- 1 2 3 4 5 6 7 I feel comfortable depending on people.
- 1 2 3 4 5 6 7 I don't feel comfortable opening up to people.
- 1 2 3 4 5 6 7 I often worry that people will not want to stay with me.
- 1 2 3 4 5 6 7 I get uncomfortable when people want to be very close.
- 1 2 3 4 5 6 7 I find it relatively easy to get close to people.
- 1 2 3 4 5 6 7 I feel comfortable sharing my private thoughts and feelings with people.
- 1 2 3 4 5 6 7 It's not difficult for me to get close to people.
- 1 2 3 4 5 6 7 I usually discuss my problems and concerns with people.
- 1 2 3 4 5 6 7 It helps to turn to people in times of need.
- 1 2 3 4 5 6 7 I tell people I'm close to just about everything.
- 1 2 3 4 5 6 7 I often wish that people's feelings for me were as strong as my feelings for them.
- 1 2 3 4 5 6 7 I talk things over with people I'm close to.
- 1 2 3 4 5 6 7 I am nervous when people get too close to me.
- 1 2 3 4 5 6 7 I do not often worry about being abandoned.
- 1 2 3 4 5 6 7 I find it easy to depend on people.
- 1 2 3 4 5 6 7 People really understand me and my needs.

## Appendix B: Mentalization Scale

### Questionnaire #3

PLEASE DO **NOT** PUT YOUR NAME ON THIS FORM. Your responses are completely confidential and anonymous.

Directions: Please read each of the items carefully and CIRCLE a number on the scale from 1 to 5, depending on how much the item is CORRECT ABOUT YOU PERSONALLY.

1	2	3	4	5
Completely incorrect	Mostly incorrect	Both correct and incorrect	Mostly correct	Completely correct

1. I find it important to understand reasons for my behavior.	1	2	3	4	5
2. When I make conclusions about other people's personality traits, I carefully observe what they say and do.	1	2	3	4	5
3. I can recognize other people's feelings.	1	2	3	4	5
4. I often think about other people and their behavior.	1	2	3	4	5
5. Usually I can recognize what makes people feel uneasy.	1	2	3	4	5
6. I can sympathize with other people's feelings.	1	2	3	4	5
7. When someone annoys me I try to understand why I react in that way.	1	2	3	4	5
8. When I get upset, I am not sure whether I am sad, afraid, or angry.	1	2	3	4	5
9. I do not like to waste time trying to understand in detail other people's behavior.	1	2	3	4	5
10. I can make good predictions of other people's behavior when I know their beliefs and feelings.	1	2	3	4	5
11. Often I cannot explain, even to myself, why I did something.	1	2	3	4	5
12. Sometimes I can understand someone's feelings before she/he tells me anything.	1	2	3	4	5
13. I find it important to understand what happens in my relationships with people close to me.	1	2	3	4	5
14. I do not want to find out something about myself that I will not like.	1	2	3	4	5
15. To understand someone's behavior, we need to know her/his thoughts, wishes, and feelings.	1	2	3	4	5
16. I often talk about emotions with people that I am close to.	1	2	3	4	5
17. I like reading books and newspaper articles about psychological subjects.	1	2	3	4	5
18. I find it difficult to admit to myself that I am sad, hurt, or afraid.	1	2	3	4	5
19. I do not like to think about my problems.	1	2	3	4	5
20. I can describe significant traits of people who are close to me with precision and in detail.	1	2	3	4	5
21. I am often confused about my exact feelings.	1	2	3	4	5
22. It is difficult for me to find adequate words to express my feelings.	1	2	3	4	5
23. People tell me that I understand them and give them sound advice.	1	2	3	4	5
24. I have always been interested in why people behave in certain ways.	1	2	3	4	5
25. I can easily describe what I feel.	1	2	3	4	5
26. While people talk about their feelings and needs my thoughts often drift away.	1	2	3	4	5
27. Since we all depend on life circumstances, it is meaningless to think of other people's intentions or wishes.	1	2	3	4	5
28. One of the most important things that children should learn is to express their feelings and wishes.	1	2	3	4	5

## Appendix C: Beliefs About Infant Toddler Education and Care <sup>1</sup>

### Questionnaire #1

**PLEASE DO NOT PUT YOUR NAME ON THIS FORM.** Your responses are completely confidential and anonymous.

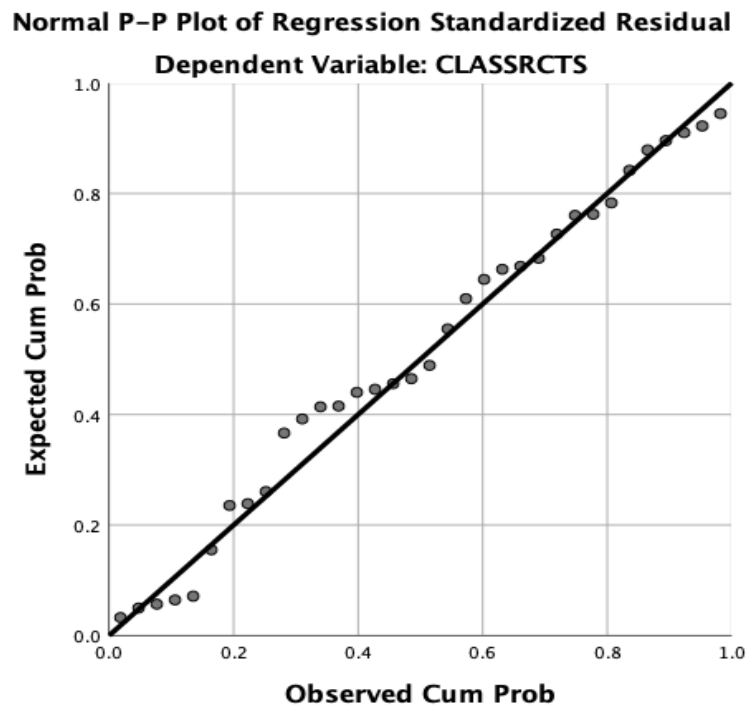
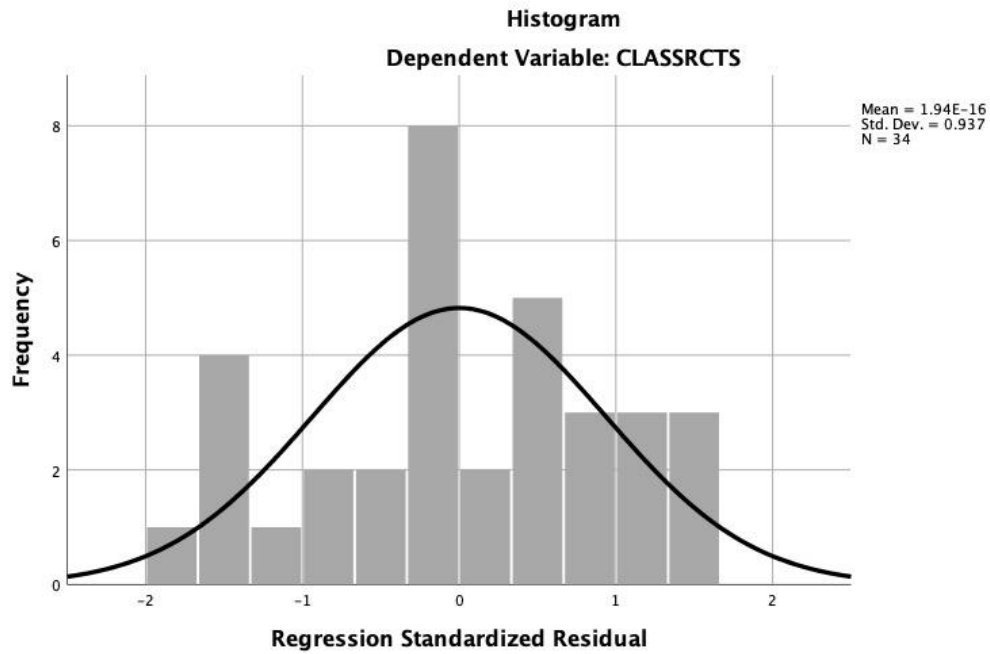
Please read each of the items carefully and CIRCLE a number on the scale from 1 to 5 to fill in the blank, depending on how IMPORTANT YOU BELIEVE each item is to infant care. Base your answers on your PERSONAL OPINION of each item.

1	2	3	4	5
Not at all important	Somewhat important	Neutral	Somewhat important	Extremely important

1. When infants and toddlers start childcare, it is ____ that both parent(s) and baby spend time in the new classroom together.	1	2	3	4	5
2. Feeding infants and toddlers when they are hungry, changing their diapers as needed, and putting them down for a nap when they are tired, according to their own schedule is ____.	1	2	3	4	5
3. Involving families in all decision-making about caregiving routines such as sleeping, eating, napping, and changing diapers/nappies in the childcare setting is ____.	1	2	3	4	5
4. It is ____ for infants and toddlers to be able to have free choice in activities and access to toys and materials in both indoor and outdoor environments.	1	2	3	4	5
5. It is ____ to help infants learn to hold their bottles as soon as they can.	1	2	3	4	5
6. It is ____ for all infants and toddlers to go outside on a daily basis, unless the weather conditions are severe or the temperatures extreme.	1	2	3	4	5
7. The teacher's role in training or teaching infants and toddlers to achieve important developmental milestones like grasping objects, sitting up, crawling, walking, stacking blocks, etc. is ____.	1	2	3	4	5
8. It is ____ for infants and toddlers to learn through interaction with their peers.	1	2	3	4	5
9. Getting through routine chores such as changing diapers/nappies, feeding, getting babies down to nap as quickly as possible is ____ in infant toddler classrooms.	1	2	3	4	5
10. It is ____ that changing (diapers/nappies), feeding, and sleeping follow a set schedule for the whole group.	1	2	3	4	5
11. It is ____ for infant toddler practitioners to provide information and connect families to needed resources.	1	2	3	4	5
12. Allowing babies to "cry-it-out" is ____ as long as they are safe.	1	2	3	4	5
13. It is ____ for infants and toddlers to move up to a new room when they achieve certain milestones, like becoming steady on their feet, walking, or having their first and second birthdays.	1	2	3	4	5
14. It is ____ to put non-mobile infants into baby equipment (e.g., walkers, bumbos, baby seats, etc.) during playtime.	1	2	3	4	5
15. It is ____ to keep non-mobile and mobile infants and toddlers separated from one another during free play.	1	2	3	4	5
16. It is ____ to provide books and other images around the room that represent diversity in terms of culture, gender, ability, race, religion, ethnicity, and any other differences that represent the community and the families in the program.	1	2	3	4	5
18. It is ____ to limit the number of popular toys in the infant toddler classroom so that they can learn lessons in sharing with their friends.	1	2	3	4	5
19. It is ____ to prepare toddlers for school by having toys and activities that support learning the alphabet, numbers, shapes, colors, and counting.	1	2	3	4	5
20. It is ____ for practitioners to use techniques such as giving rewards, positive and negative reinforcement, and reprimands/punishment to manage behavior in classrooms with infants and toddlers.	1	2	3	4	5
21. Involving families in ALL decision-making about policies related to the care and education of their infants and toddlers in the childcare setting is ____.	1	2	3	4	5
22. Changing rooms and having different adults taking care of infants and toddlers periodically is ____ in preparing them for the primary school structure.	1	2	3	4	5
23. It is ____ to help infants learn to feed themselves solid food as soon as they can.	1	2	3	4	5

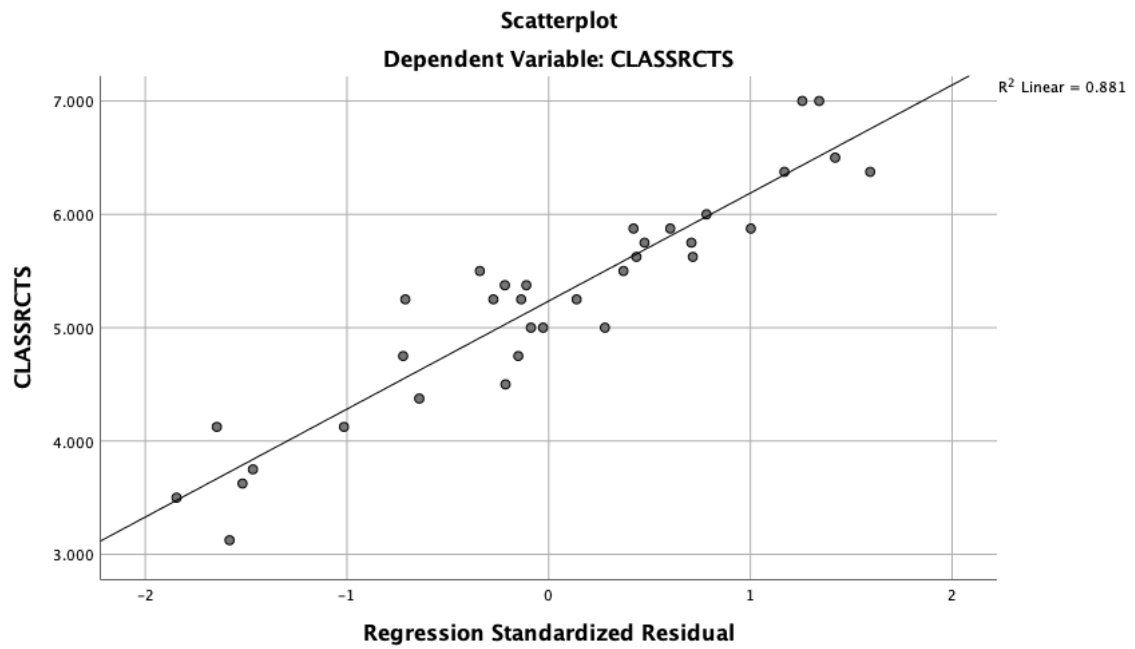
<sup>1</sup> Struck through items indicate those eliminated due to poor reliability within the measure at initial analysis.

## Appendix D: Normal Distribution Curve and Normal Probability Plot of Residuals

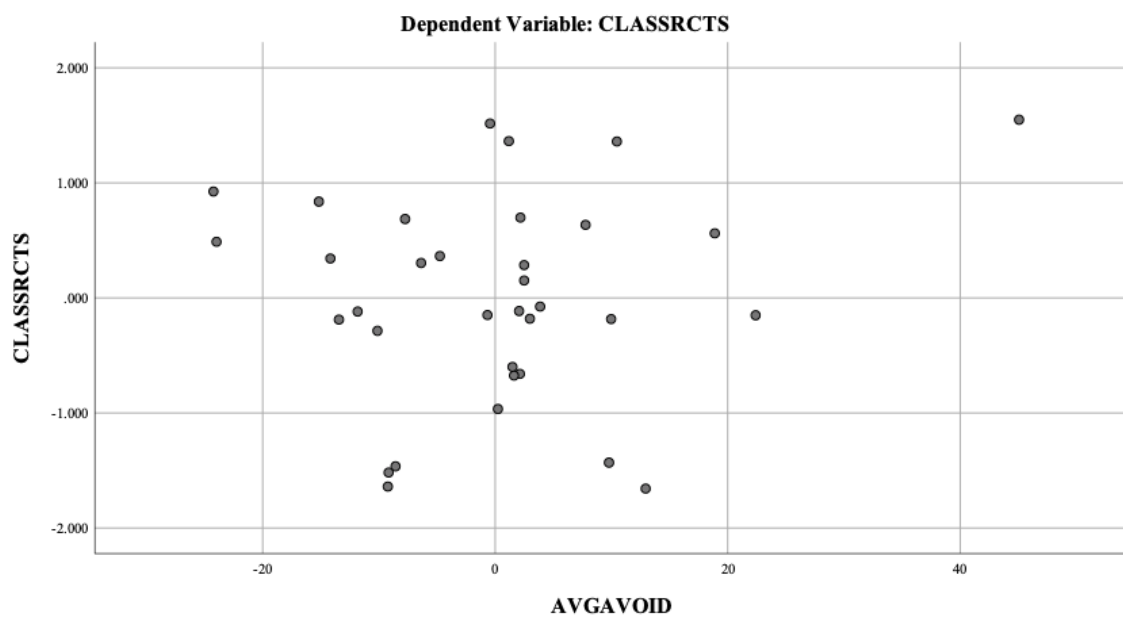
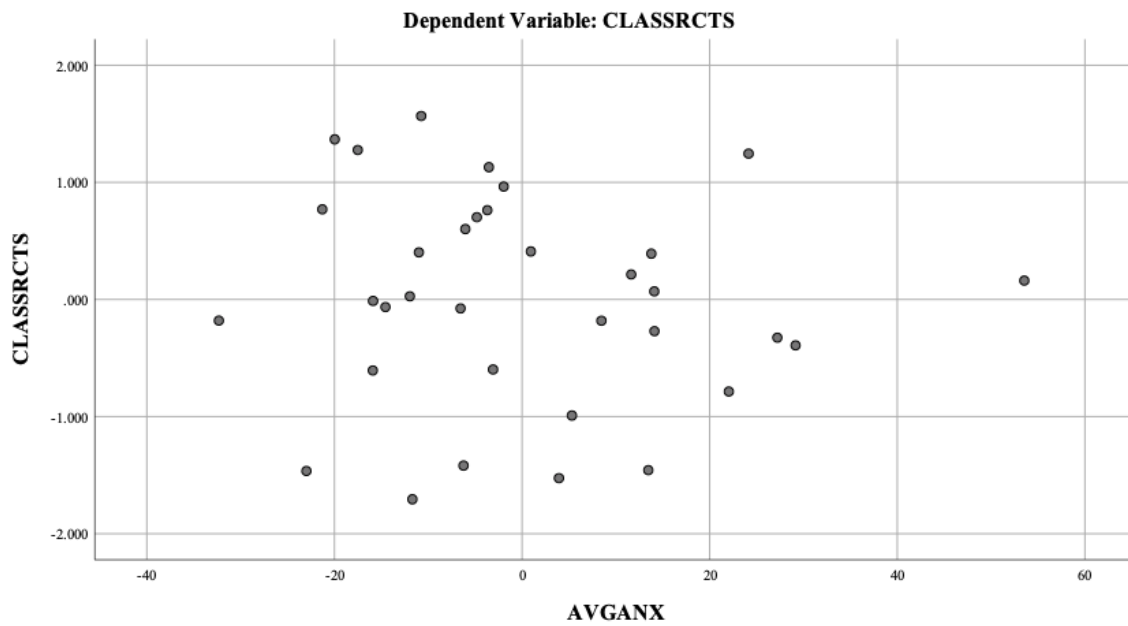


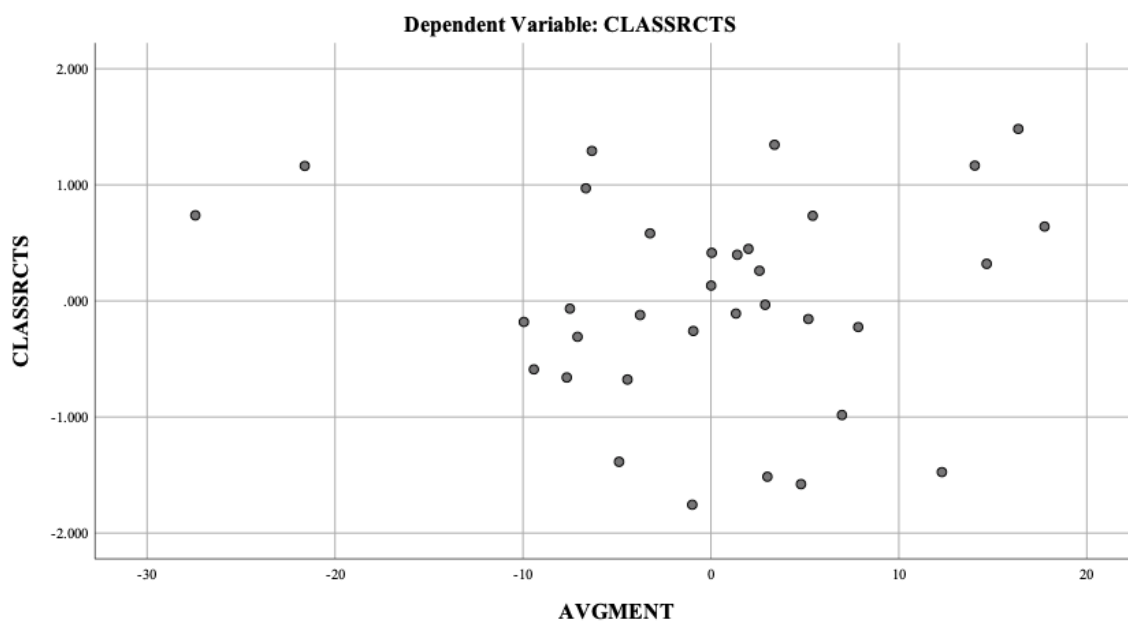
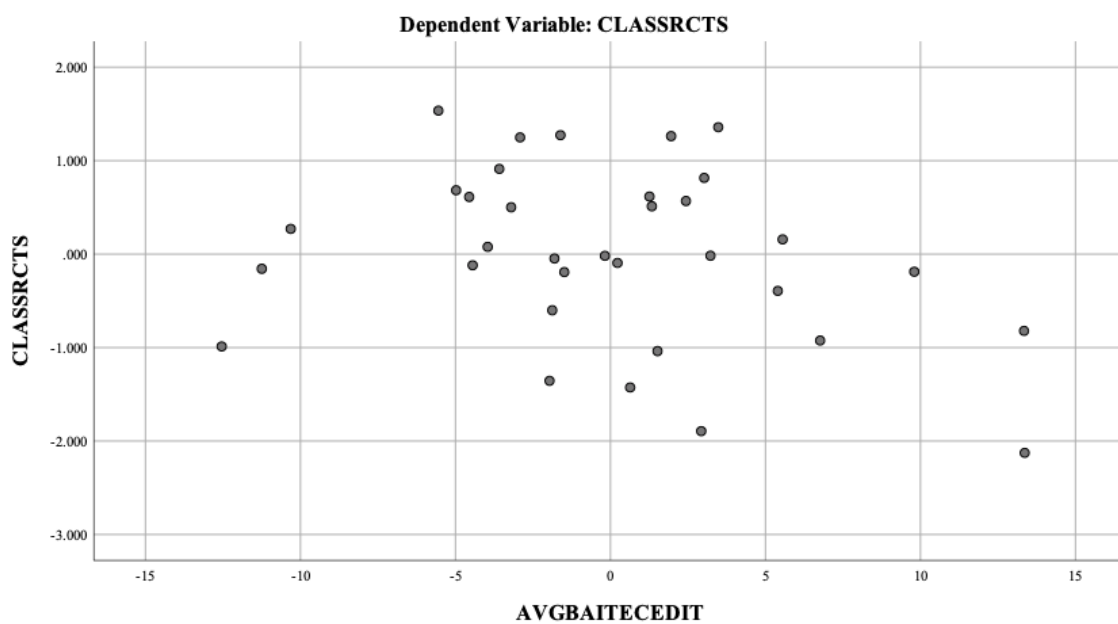


## Appendix E: Plot of Standardized Residuals



## Appendix F: Partial Regression Plots





## Appendix G: IRB Approval Form



### ACTION ON EXEMPTION APPROVAL REQUEST

TO: Alexandra Benoit  
Social Work

FROM: Dennis Landin  
Chair, Institutional Review Board

DATE: July 25, 2018

RE: IRB# E11099

Institutional Review Board  
Dr. Dennis Landin, Chair  
130 David Boyd Hall  
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[irb@lsu.edu](mailto:irb@lsu.edu)  
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TITLE: Examining relationships between early childcare teachers' adult attachment orientations and quality of interaction in the infant classroom

New Protocol/Modification/Continuation: New Protocol

Review Date: 7/2/2018

Approved X Disapproved \_\_\_\_\_

Approval Date: 7/17/2018 Approval Expiration Date: 7/16/2021

Exemption Category/Paragraph: 1; 2a

Signed Consent Waived?: No

Re-review frequency: (three years unless otherwise stated)

LSU Proposal Number (if applicable):

Protocol Matches Scope of Work in Grant proposal: (if applicable)

By: Dennis Landin, Chairman 

### PRINCIPAL INVESTIGATOR: PLEASE READ THE FOLLOWING –

#### Continuing approval is CONDITIONAL on:

1. Adherence to the approved protocol, familiarity with, and adherence to the ethical standards of the Belmont Report, and LSU's Assurance of Compliance with DHHS regulations for the protection of human subjects\*
2. Prior approval of a change in protocol, including revision of the consent documents or an increase in the number of subjects over that approved.
3. Obtaining renewed approval (or submittal of a termination report), prior to the approval expiration date, upon request by the IRB office (irrespective of when the project actually begins); notification of project termination.
4. Retention of documentation of informed consent and study records for at least 3 years after the study ends.
5. Continuing attention to the physical and psychological well-being and informed consent of the individual participants, including notification of new information that might affect consent.
6. A prompt report to the IRB of any adverse event affecting a participant potentially arising from the study.
7. Notification of the IRB of a serious compliance failure.
8. **SPECIAL NOTE:** When emailing more than one recipient, make sure you use bcc. Approvals will automatically be closed by the IRB on the expiration date unless the PI requests a continuation.

\* All investigators and support staff have access to copies of the Belmont Report, LSU's Assurance with DHHS, DHHS (45 CFR 46) and FDA regulations governing use of human subjects, and other relevant documents in print in this office or on our World Wide Web site at <http://www.lsu.edu/irb>

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## **Vita**

Alexandra, or “Alex,” as she is typically referred to, grew up in southeast Louisiana in the small town of Lockport, located in the central region of Lafourche Parish. After graduating from E.D. White Catholic High School in 2007, she continued on to college at Nicholls State University in the same town of Thibodaux, Louisiana. Alex began her higher education journey seeking a business degree, but soon realized that it was not for her. Due to personal life experiences, she decided that a career strongly focused on helping others would be the best path for her and settled into her studies in the fields of social services and family studies. Upon graduating with her bachelor’s degree in 2011, she decided to continue on with her education at Tulane University in New Orleans, seeking a Master of Social Work degree. During her time completing her master’s program, Alex felt that she had not completed her learning journey, and continued into her doctoral degree program with the LSU School of Social Work following the completion of her MSW degree. Along her educational journey, Alex developed a passion for children’s mental health and the promotion of healthy child development. During her time in her master’s program, she completed her internship with Early Childhood Supports and Services, a previously funded Louisiana program that provided infant mental health services for children aged 0-5 years of age. After receiving her MSW and while completing her doctorate, she worked in several positions treating and working with child populations. She provided community based mental health treatment in New Orleans, Louisiana with the Children’s Bureau of New Orleans, and provided outpatient treatment to children and adolescents in the Jackson, MS area. In addition to these clinical works, she spent time in the role of a mental health consultant to childcare centers, where she worked with teachers and directors of childcare facilities to help improve social-emotional developmental outcomes and teacher-child relationships in center-

based care. Her work in this arena inspired the direction of this project. After living away for a few years, Alex has returned to Thibodaux, where she now lives with her husband, Jeremy, her son, John, and her dog, Journey. She looks forward to pursuing teaching opportunities in higher education, participating in further research endeavors, and continuing her clinical work in therapeutic settings.